

=> d que stat 129

```

L12      71931 SEA FILE=REGISTRY ABB=ON  PLU=ON  80-62-6/RN,CRN
L13      162911 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L12
L14              QUE ABB=ON  PLU=ON  ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
              (ESTER(2A)?EXCHANG?)
L15      13287 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13 (L) RACT+NT/RL
L16              QUE ABB=ON  PLU=ON  TRANSESTERIFICATION+PFT,OLD,NT/CT
L17      472 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13(L)L14
L18      429 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15 AND (L16 OR L17)
L19              QUE ABB=ON  PLU=ON  ?AZEOTROP?
L21              QUE ABB=ON  PLU=ON  ?ALCOHOL? OR ?ALKANOL? OR ?PHENOL?
L24              QUE ABB=ON  PLU=ON  ?POLYOL? OR (POLY(1W)OL) OR ?ALKAN(1
              W)OL
L25              QUE ABB=ON  PLU=ON  DIOL OR TRIOL OR GLYCOL OR (DI(1W)OL
              ) OR (TRI(1W)OL)
L26      296 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 AND (L21 OR L24 OR L25)
L27              QUE ABB=ON  PLU=ON  AZEO(1W)TROP?
L28      49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L26 AND (L19 OR L27)
L29      49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND (AY<2005 OR PY<2005
              OR PRY<2005 OR MY<2005 OR REVIEW/DT)

```

=> d his ful

(FILE 'HOME' ENTERED AT 15:06:17 ON 09 MAR 2006)

FILE 'ZCAPLUS' ENTERED AT 15:06:29 ON 09 MAR 2006
E WO2004-JP1036/APPS

FILE 'HCAPLUS' ENTERED AT 15:09:23 ON 09 MAR 2006
L1 1 SEA ABB=ON PLU=ON WO2004-JP1036/APPS
 SAVE TEMP L1 VAL924HCAAPP/A

FILE 'STNGUIDE' ENTERED AT 15:09:46 ON 09 MAR 2006

FILE 'HCAPLUS' ENTERED AT 15:09:52 ON 09 MAR 2006
D IBIB ED AB IND

FILE 'STNGUIDE' ENTERED AT 15:09:52 ON 09 MAR 2006

FILE 'WPIX' ENTERED AT 15:11:05 ON 09 MAR 2006
L2 1 SEA ABB=ON PLU=ON WO2004-JP1036/APPS
 SAVE TEMP L2 VAL924WPIAPP/A
 D IALL CODE

FILE 'STNGUIDE' ENTERED AT 15:11:31 ON 09 MAR 2006

FILE 'REGISTRY' ENTERED AT 15:12:06 ON 09 MAR 2006

FILE 'HCAPLUS' ENTERED AT 15:12:09 ON 09 MAR 2006
L3 TRA L1 1- RN : 7 TERMS

FILE 'REGISTRY' ENTERED AT 15:12:12 ON 09 MAR 2006
L4 7 SEA ABB=ON PLU=ON L3
 SAVE TEMP L4 VAL924REGAPP/A
 D SCAN

FILE 'STNGUIDE' ENTERED AT 15:13:07 ON 09 MAR 2006
D SAVED

L5 FILE 'LREGISTRY' ENTERED AT 15:15:25 ON 09 MAR 2006
STR

FILE 'REGISTRY' ENTERED AT 15:20:57 ON 09 MAR 2006

FILE 'STNGUIDE' ENTERED AT 15:21:14 ON 09 MAR 2006

FILE 'LREGISTRY' ENTERED AT 15:21:40 ON 09 MAR 2006
SAVE TEMP L5 VAL924RXNQ/Q
L6 STR L5

L7 FILE 'REGISTRY' ENTERED AT 15:22:36 ON 09 MAR 2006
50 SEA SSS SAM L6

L8 FILE 'LREGISTRY' ENTERED AT 15:22:59 ON 09 MAR 2006
STR L6

FILE 'REGISTRY' ENTERED AT 15:23:11 ON 09 MAR 2006
L9 50 SEA SSS SAM L8
L*** DEL 0 S 80-62-60/RN
L10 1 SEA ABB=ON PLU=ON 80-62-6/RN
D SCAN
SAVE TEMP L10 VAL924RRTRN/A
L11 1 SEA ABB=ON PLU=ON L10 AND L4
L12 71931 SEA ABB=ON PLU=ON 80-62-6/RN,CRN

L13 FILE 'HCAPLUS' ENTERED AT 15:25:14 ON 09 MAR 2006
162911 SEA ABB=ON PLU=ON L12

L14 FILE 'ZCAPLUS' ENTERED AT 15:25:34 ON 09 MAR 2006
QUE ABB=ON PLU=ON ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
(ESTER(2A)?EXCHANG?)

L15 FILE 'HCAPLUS' ENTERED AT 15:26:24 ON 09 MAR 2006
13287 SEA ABB=ON PLU=ON L13 (L) RACT+NT/RL
L16 QUE ABB=ON PLU=ON TRANSESTERIFICATION+PFT,OLD,NT/CT
L17 472 SEA ABB=ON PLU=ON L13 (L) L14
L18 429 SEA ABB=ON PLU=ON L15 AND (L16 OR L17)
L*** DEL 1 S L18 AND L1

L19 FILE 'ZCAPLUS' ENTERED AT 15:28:00 ON 09 MAR 2006
QUE ABB=ON PLU=ON ?AZEOTROP?
L20 QUE ABB=ON PLU=ON ?DISTILL?

FILE 'HCAPLUS' ENTERED AT 15:28:28 ON 09 MAR 2006

L21 FILE 'ZCAPLUS' ENTERED AT 15:28:47 ON 09 MAR 2006
QUE ABB=ON PLU=ON ?ALCOHOL? OR ?ALKANOL? OR ?PHENOL?

L22 FILE 'HCAPLUS' ENTERED AT 15:29:11 ON 09 MAR 2006
256 SEA ABB=ON PLU=ON L18 AND L21
L23 47 SEA ABB=ON PLU=ON L22 AND L19

FILE 'STNGUIDE' ENTERED AT 15:30:13 ON 09 MAR 2006
D QUE STAT

L24 FILE 'ZCAPLUS' ENTERED AT 15:31:21 ON 09 MAR 2006
QUE ABB=ON PLU=ON ?POLYOL? OR (POLY(1W)OL) OR ?ALKAN(1W)OL

FILE 'HCAPLUS' ENTERED AT 15:31:51 ON 09 MAR 2006

FILE 'ZCAPLUS' ENTERED AT 15:32:14 ON 09 MAR 2006
L25 QUE ABB=ON PLU=ON DIOL OR TRIOL OR GLYCOL OR (DI(1W)OL) OR
(TRI(1W)OL)

FILE 'HCAPLUS' ENTERED AT 15:32:46 ON 09 MAR 2006
L*** DEL 549274 S L18 AND L21 OR L24 OR L25
L26 296 SEA ABB=ON PLU=ON L18 AND (L21 OR L24 OR L25)

FILE 'ZCAPLUS' ENTERED AT 15:33:56 ON 09 MAR 2006
L27 QUE ABB=ON PLU=ON AZEO(1W)TROP?

FILE 'HCAPLUS' ENTERED AT 15:34:11 ON 09 MAR 2006
L28 49 SEA ABB=ON PLU=ON L26 AND (L19 OR L27)

FILE 'STNGUIDE' ENTERED AT 15:34:43 ON 09 MAR 2006

FILE 'HCAPLUS' ENTERED AT 15:35:44 ON 09 MAR 2006
L29 49 SEA ABB=ON PLU=ON L28 AND (AY<2005 OR PY<2005 OR PRY<2005 OR
MY<2005 OR REVIEW/DT)
SAVE TEMP L29 VAL924HCA1B/A

FILE 'STNGUIDE' ENTERED AT 15:36:32 ON 09 MAR 2006

FILE 'HCAPLUS' ENTERED AT 15:37:08 ON 09 MAR 2006
D SCAN TI HIT

FILE 'STNGUIDE' ENTERED AT 15:37:29 ON 09 MAR 2006

FILE 'ZCAPLUS' ENTERED AT 15:38:38 ON 09 MAR 2006
L30 QUE ABB=ON PLU=ON DOI, J?/AU
L31 QUE ABB=ON PLU=ON SATOU, Y?/AU
L32 QUE ABB=ON PLU=ON TANIGUCHI, Y?/AU
L33 QUE ABB=ON PLU=ON TOKUDA, M?/AU

FILE 'HCAPLUS' ENTERED AT 15:39:39 ON 09 MAR 2006
L34 3988 SEA ABB=ON PLU=ON (L30 OR L31 OR L32 OR L33)
D QUE L29
L35 18 SEA ABB=ON PLU=ON L34 AND L14
L36 QUE ABB=ON PLU=ON ?METHACRYL?
L37 14 SEA ABB=ON PLU=ON L35 AND L36
SAVE TEMP L37 VAL924HCAINV/A

FILE 'STNGUIDE' ENTERED AT 15:41:23 ON 09 MAR 2006

FILE 'STNGUIDE' ENTERED AT 15:41:38 ON 09 MAR 2006
D SAVED
D QUE STAT L29

FILE HOME

FILE ZCAPLUS

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching

databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS is strictly prohibited.

FILE COVERS 1907 - 9 Mar 2006 VOL 144 ISS 11
FILE LAST UPDATED: 8 Mar 2006 (20060308/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE HCAPLUS

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 9 Mar 2006 VOL 144 ISS 11
FILE LAST UPDATED: 8 Mar 2006 (20060308/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Mar 3, 2006 (20060303/UP).

FILE WPIX
FILE LAST UPDATED: 8 MAR 2006 <20060308/UP>
MOST RECENT DERWENT UPDATE: 200616 <200616/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
<http://scientific.thomson.com/support/patents/coverage/latestupdates/>

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
GUIDES, PLEASE VISIT:
<http://scientific.thomson.com/support/products/dwpi/>

>>> FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT
DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS:
<http://scientific.thomson.com/support/products/dwpifv/>

>>> THE CPI AND EPI MANUAL CODES WILL BE REVISED FROM UPDATE 200601.
PLEASE CHECK:

<http://scientific.thomson.com/support/patents/dwpioref/reftools/classificat>

>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html and
<http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf> <<<

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 8 MAR 2006 HIGHEST RN 876273-86-8
DICTIONARY FILE UPDATES: 8 MAR 2006 HIGHEST RN 876273-86-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

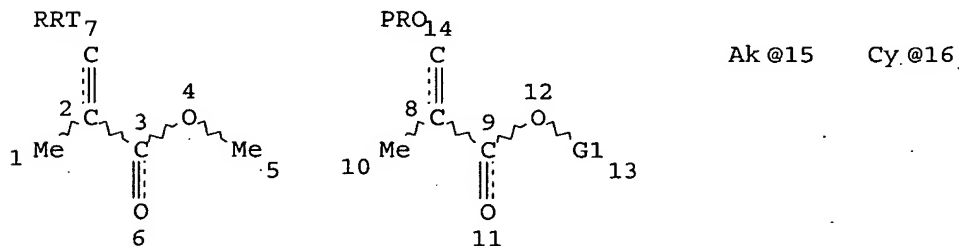
<http://www.cas.org/ONLINE/UG/regprops.html>

FILE LREGISTRY

LREGISTRY IS A STATIC LEARNING FILE

NEW CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

=>. => d que stat l43
L6 STR



VAR G1=15/16
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M2 C AT 15

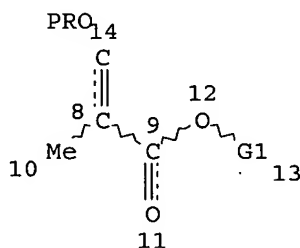
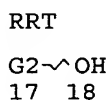
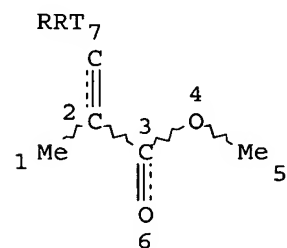
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L19 QUE ABB=ON PLU=ON ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
(ESTER(2A)?EXCHANG?)
L24 QUE ABB=ON PLU=ON ?AZEOTROP?
L25 QUE ABB=ON PLU=ON ?ALCOHOL? OR ?ALKANOL? OR ?PHENOL?
L26 QUE ABB=ON PLU=ON ?POLYOL? OR (POLY(1W)OL) OR ?ALKAN(1
W)OL
L27 QUE ABB=ON PLU=ON DIOL OR TRIOL OR GLYCOL OR (DI(1W)OL
) OR (TRI(1W)OL)
L29 QUE ABB=ON PLU=ON AZEO(1W)TROP?
L33 77 SEA FILE=CASREACT SSS FUL L6 (365 REACTIONS)
L34 75 SEA FILE=CASREACT ABB=ON PLU=ON L33/COM
L35 74 SEA FILE=CASREACT ABB=ON PLU=ON L34 AND (AY<2005 OR PY<2005
OR PRY<2005 OR MY<2005 OR REVIEW/DT)
L36 47 SEA FILE=CASREACT ABB=ON PLU=ON L35 AND L19
L37 31 SEA FILE=CASREACT ABB=ON PLU=ON L36 AND (L25 OR L26 OR L27)
L38 10 SEA FILE=CASREACT ABB=ON PLU=ON L36 AND (L24 OR L29)
L40 QUE ABB=ON PLU=ON ?DISTIL?
L41 1 SEA FILE=CASREACT ABB=ON PLU=ON L37 AND L40
L42 7 SEA FILE=CASREACT ABB=ON PLU=ON L37 AND L38
L43 11 SEA FILE=CASREACT ABB=ON PLU=ON L38 OR L41 OR L42

=> d que stat l46

L45 STR.



Ak@15 Cy@16

PRO

Me~OH
19 20

VAR G1=15/16

VAR G2=15/16

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M2 C AT 15

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L46 0 SEA FILE=CHEMINFORMRX SSS SAM L45 (0 REACTIONS)

43.2% DONE 1000 VERIFIED 0 HIT RXNS 0 DOCS
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
 SEARCH TIME: 00.00.09

FULL FILE PROJECTIONS: ONLINE **INCOMPLETE**
 BATCH **COMPLETE**
 PROJECTED VERIFICATIONS: 43442 TO 49118
 PROJECTED ANSWERS: 0 TO 0

=> d-his ful

(FILE 'HOME' ENTERED AT 07:46:39 ON 10 MAR 2006)

FILE 'HCAPLUS' ENTERED AT 07:46:50 ON 10 MAR 2006
 ACT VAL924HCAAPP/A

L1 1 SEA ABB=ON PLU=ON WO2004-JP1036/APPS

FILE 'WPIX' ENTERED AT 07:47:03 ON 10 MAR 2006
 ACT VAL924WPIAPP/A

L2 1 SEA ABB=ON PLU=ON WO2004-JP1036/APPS

FILE 'REGISTRY' ENTERED AT 07:47:25 ON 10 MAR 2006
 ACT VAL924REGAPP/A

L3 (1) SEA ABB=ON PLU=ON WO2004-JP1036/APPS
 L4 SEL PLU=ON L3 1- RN : 7 TERMS
 L5 7 SEA ABB=ON PLU=ON L4

FILE 'REGISTRY' ENTERED AT 07:47:44 ON 10 MAR 2006
 ACT VAL924RXNQ/Q

L6 STR
 ACT VAL924RRTRN/A

L7 1 SEA ABB=ON PLU=ON 80-62-6/RN

FILE 'HCAPLUS' ENTERED AT 07:48:19 ON 10 MAR 2006
 ACT VAL924HCAINV/A

L8 QUE ABB=ON PLU=ON ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
 (ESTER(2A)?EXCHANG?)
 L9 QUE ABB=ON PLU=ON DOI, J?/AU
 L10 QUE ABB=ON PLU=ON SATOU, Y?/AU
 L11 QUE ABB=ON PLU=ON TANIGUCHI, Y?/AU
 L12 QUE ABB=ON PLU=ON TOKUDA, M?/AU
 L13 (3988) SEA ABB=ON PLU=ON (L9 OR L10 OR L11 OR L12)
 L14 (18) SEA ABB=ON PLU=ON L13 AND L8
 L15 QUE ABB=ON PLU=ON ?METHACRYL?
 L16 14 SEA ABB=ON PLU=ON L14 AND L15

ACT VAL924HCA1B/A

L17 (71931)SEA ABB=ON PLU=ON 80-62-6/RN,CRN
L18 (162911)SEA ABB=ON PLU=ON L17
L19 QUE ABB=ON PLU=ON ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
(ESTER(2A)?EXCHANG?)
L20 (13287)SEA ABB=ON PLU=ON L18 (L) RACT+NT/RL
L21 QUE ABB=ON PLU=ON TRANSESTERIFICATION+PFT,OLD,NT/CT
L22 (472)SEA ABB=ON PLU=ON L18(L)L19
L23 (429)SEA ABB=ON PLU=ON L20 AND (L21 OR L22)
L24 QUE ABB=ON PLU=ON ?AZEOTROP?
L25 QUE ABB=ON PLU=ON ?ALCOHOL? OR ?ALKANOL? OR ?PHENOL?
L26 QUE ABB=ON PLU=ON ?POLYOL? OR (POLY(1W)OL) OR ?ALKAN(1W)OL
L27 QUE ABB=ON PLU=ON DIOL OR TRIOL OR GLYCOL OR (DI(1W)OL) OR
(TRI(1W)OL)
L28 (296)SEA ABB=ON PLU=ON L23 AND (L25 OR L26 OR L27)
L29 QUE ABB=ON PLU=ON AZEO(1W)TROP?
L30 (49)SEA ABB=ON PLU=ON L28 AND (L24 OR L29)
L31 49 SEA ABB=ON PLU=ON L30 AND (AY<2005 OR PY<2005 OR PRY<2005 OR
MY<2005 OR REVIEW/DT)

FILE 'STNGUIDE' ENTERED AT 07:48:40 ON 10 MAR 2006

FILE 'CASREACT' ENTERED AT 07:52:57 ON 10 MAR 2006

L32 0 SEA SSS SAM L6 (0 REACTIONS)
D QUE STAT

FILE 'STNGUIDE' ENTERED AT 07:53:23 ON 10 MAR 2006

FILE 'CASREACT' ENTERED AT 07:55:29 ON 10 MAR 2006

L33 77 SEA SSS FUL L6 (365 REACTIONS)
L34 75 SEA ABB=ON PLU=ON L33/COM
L35 74 SEA ABB=ON PLU=ON L34 AND (AY<2005 OR PY<2005 OR PRY<2005 OR
MY<2005 OR REVIEW/DT)

FILE 'STNGUIDE' ENTERED AT 07:57:59 ON 10 MAR 2006

FILE 'CASREACT' ENTERED AT 07:59:09 ON 10 MAR 2006

L36 47 SEA ABB=ON PLU=ON L35 AND L19
L37 31 SEA ABB=ON PLU=ON L36 AND (L25 OR L26 OR L27)
L38 10 SEA ABB=ON PLU=ON L36 AND (L24 OR L29)
L39 34 SEA ABB=ON PLU=ON L37 OR L38

FILE 'ZCAPLUS' ENTERED AT 08:01:13 ON 10 MAR 2006

L40 QUE ABB=ON PLU=ON ?DISTIL?

FILE 'CASREACT' ENTERED AT 08:01:33 ON 10 MAR 2006

L41 1 SEA ABB=ON PLU=ON L37 AND L40
L42 7 SEA ABB=ON PLU=ON L37 AND L38
L43 11 SEA ABB=ON PLU=ON L38 OR L41 OR L42
D SCAN
SAVE TEMP L43 VAL924CRX1B/A

FILE 'STNGUIDE' ENTERED AT 08:03:51 ON 10 MAR 2006

FILE 'CHEMINFORMRX' ENTERED AT 08:04:04 ON 10 MAR 2006

D QUE L43
L44 0 SEA SSS SAM L6 (0 REACTIONS)

FILE 'LREGISTRY' ENTERED AT 08:05:45 ON 10 MAR 2006
L45 STR L6

FILE 'CHEMINFORMRX' ENTERED AT 08:07:44 ON 10 MAR 2006
L46 0 SEA SSS SAM L45 (0 REACTIONS)
D QUE STAT
SAVE TEMP L46 VAL924CHM1B/A

FILE 'STNGUIDE' ENTERED AT 08:08:56 ON 10 MAR 2006

FILE 'BEILSTEIN' ENTERED AT 08:09:01 ON 10 MAR 2006

FILE 'STNGUIDE' ENTERED AT 08:09:16 ON 10 MAR 2006

FILE 'BEILSTEIN' ENTERED AT 08:10:37 ON 10 MAR 2006
L47 0 SEA ABB=ON PLU=ON METHYLMETHACRYLATE/CN
L48 1 SEA ABB=ON PLU=ON METHYL METHACRYLATE/CN
SEL L48 BRN
L49 3239 SEA ABB=ON PLU=ON 605459/RX.RBRN
L50 1 SEA ABB=ON PLU=ON METHANOL/CN
SEL L50 BRN
L51 1844 SEA ABB=ON PLU=ON 1098229/RX.PBRN
L52 2 SEA ABB=ON PLU=ON L49 AND L51
L53 2 SEA ABB=ON PLU=ON L49 AND (?TRANSESTER?/BIRX OR (TRANS/BIRX(1
W)ESTER?/BIRX) OR (ESTER/BIRX(2A)?EXCHANG?/BIRX))
L54 20 SEA ABB=ON PLU=ON L49 AND (?TRANSESTER?/RX OR (TRANS/RX(1W)ES
TER?/RX) OR (ESTER/RX(2A)?EXCHANG?/RX))
L55 22 SEA ABB=ON PLU=ON (L52 OR L53 OR L54)
SAVE TEMP L55 VAL924BEI1/A
SELECT L55 1- BABSAN

FILE 'BABS' ENTERED AT 08:16:48 ON 10 MAR 2006
L*** DEL 0 S E3-E20/BABS
L56 18 SEA ABB=ON PLU=ON (6010684/AN OR 6054637/AN OR 6408912/AN OR
5501182/AN OR 5575544/AN OR 5596056/AN OR 5648444/AN OR
5710950/AN OR 5872310/AN OR 5897892/AN OR 5901578/AN OR
6012519/AN OR 6147901/AN OR 6245983/AN OR 6311692/AN OR
6334922/AN OR 6350376/AN OR 6399852/AN)
L57 18 SEA ABB=ON PLU=ON L56 AND (AY<2005 OR PY<2005 OR PRY<2005 OR
MY<2005 OR REVIEW/DT)
SAVE TEMP L57 VAL924BAB1B/A
L58 0 SEA ABB=ON PLU=ON L57 AND (L24 OR L29)
L59 0 SEA ABB=ON PLU=ON L57 AND L40
L60 7 SEA ABB=ON PLU=ON L57 AND L15
D SCAN
SAVE TEMP L58 VAL924BAB1B/A

FILE 'STNGUIDE' ENTERED AT 08:21:12 ON 10 MAR 2006
D QUE STAT L43
D SAVED
D QUE L16

FILE 'WPIX, MEDLINE, BIOSIS, EMBASE, PASCAL, JICST-EPLUS, SCISEARCH,
CONF, CONFSCI, DISSABS' ENTERED AT 08:24:08 ON 10 MAR 2006
L61 12833 SEA ABB=ON PLU=ON (L9 OR L10 OR L11 OR L12)
L62 2 SEA ABB=ON PLU=ON L61 AND L19
L63 45 SEA ABB=ON PLU=ON L61 AND L15
D SCAN L62
L64 1 SEA ABB=ON PLU=ON L63 AND (L24 OR L29)
L65 2 SEA ABB=ON PLU=ON L62 OR L64

SAVE TEMP L65 VAL924MULINV/A
D QUE
D SAVED

FILE 'STNGUIDE' ENTERED AT 08:27:15 ON 10 MAR 2006

D QUE STAT L43
D QUE STAT L46
D QUE STAT L31
D QUE STAT L55
D QUE STAT L58

L66 FILE 'CASREACT, HCAPLUS' ENTERED AT 08:28:47 ON 10 MAR 2006
52 DUP REM L43 L31 L46 L58 (8 DUPLICATES REMOVED)
ANSWERS '1-11' FROM FILE CASREACT
ANSWERS '12-52' FROM FILE HCAPLUS

FILE 'STNGUIDE' ENTERED AT 08:28:54 ON 10 MAR 2006

FILE 'HCAPLUS, CASREACT' ENTERED AT 08:29:29 ON 10 MAR 2006
D IBIB ED AB FHIT

FILE 'STNGUIDE' ENTERED AT 08:29:36 ON 10 MAR 2006

FILE 'HCAPLUS, CASREACT' ENTERED AT 08:29:57 ON 10 MAR 2006
D IBIB AB FHIT 2-11

FILE 'STNGUIDE' ENTERED AT 08:30:09 ON 10 MAR 2006

FILE 'HCAPLUS, CASREACT' ENTERED AT 08:30:56 ON 10 MAR 2006
D IBIB ED AB HITIND HITSTR 12-52

FILE 'STNGUIDE' ENTERED AT 08:31:05 ON 10 MAR 2006
D QUE L16
D QUE L65

L67 FILE 'HCAPLUS, WPIX, JICST-EPLUS' ENTERED AT 08:32:48 ON 10 MAR 2006
15 DUP REM L16 L65 (1 DUPLICATE REMOVED)
ANSWERS '1-14' FROM FILE HCAPLUS
ANSWER '15' FROM FILE JICST-EPLUS

FILE 'STNGUIDE' ENTERED AT 08:32:57 ON 10 MAR 2006

FILE 'HCAPLUS, JICST-EPLUS' ENTERED AT 08:33:06 ON 10 MAR 2006
D IBIB ED AB L67 1-15

FILE 'STNGUIDE' ENTERED AT 08:33:08 ON 10 MAR 2006

FILE 'STNGUIDE' ENTERED AT 08:33:51 ON 10 MAR 2006
D QUE STAT L43
D QUE STAT L46

FILE HOME

FILE HCAPLUS .

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 10 Mar 2006 VOL 144 ISS 11

FILE LAST UPDATED: 8 Mar 2006 (20060308/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE WPIX

FILE LAST UPDATED: 8 MAR 2006 <20060308/UP>
MOST RECENT DERWENT UPDATE: 200616 <200616/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
<http://scientific.thomson.com/support/patents/coverage/latestupdates/>

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
GUIDES, PLEASE VISIT:
<http://scientific.thomson.com/support/products/dwpi/>

>>> FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT
DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS:
<http://scientific.thomson.com/support/products/dwpifv/>

>>> THE CPI AND EPI MANUAL CODES WILL BE REVISED FROM UPDATE 200601.
PLEASE CHECK:
<http://scientific.thomson.com/support/patents/dwpieref/reftools/classificat>

>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stdatabases/details/ipc_reform.html and
<http://scientific.thomson.com/media/scpdf/ipcrdwpf.pdf> <<<

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 8 MAR 2006 HIGHEST RN 876273-86-8
DICTIONARY FILE UPDATES: 8 MAR 2006 HIGHEST RN 876273-86-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

*

* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

FILE STNGUIDE

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Mar 3, 2006 (20060303/UP).

FILE CASREACT

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

FILE CONTENT:1840 - 5 Mar 2006 VOL 144 ISS 10

New CAS Information Use Policies, enter HELP USAGETERMS for details.

* CASREACT now has more than 10 million reactions *
*

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE ZCAPLUS

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS is strictly prohibited.

FILE COVERS 1907 - 10 Mar 2006 VOL 144 ISS 11

FILE LAST UPDATED: 8 Mar 2006 (20060308/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE CHEMINFORMRX

FILE LAST UPDATED: 8 MAR 2006 <20060308/UP>

>>> CAS Registry Numbers are available for
substances prior to 1995 <<<

FILE LREGISTRY

LREGISTRY IS A STATIC LEARNING FILE

NEW CAS INFORMATION USE POLICIES, ENTER HELP USAGETERMS FOR DETAILS.

FILE BEILSTEIN

FILE LAST UPDATED ON JANUARY 17, 2006

FILE COVERS 1771 TO 2005.

FILE CONTAINS 9,428,406 SUBSTANCES

>>>PLEASE NOTE: Reaction Data and substance data are stored in separate documents and can not be searched together in one query. Reaction data for BEILSTEIN compounds may be displayed immediately with the display codes PRE (preparations) and REA (reactions). A substance answer set retrieved after the search for a chemical name, a compounds with available reaction information by combining with PRE/FA, REA/FA or more generally with RX/FA. The BEILSTEIN Registry Number (BRN) is the link between a BEILSTEIN compound and belonging reactions. For more detailed reaction searches BRNs can be searched as reaction partner BRNs Reactant BRN (RX.RBRN) or Product BRN (RX.PBRN).<<<

>>> FOR SEARCHING PREPARATIONS SEE HELP PRE <<<

* PLEASE NOTE THAT THERE ARE NO FORMATS FREE OF COST. *
* SET NOTICE FEATURE: THE COST ESTIMATES CALCULATED FOR SET NOTICE *
* ARE BASED ON THE HIGHEST PRICE CATEGORY. THEREFORE; THESE *
* ESTIMATES MAY NOT REFLECT THE ACTUAL COSTS. *
* FOR PRICE INFORMATION SEE HELP COST *

NEW

* PATENT NUMBERS (PN) AND BABS ACCESSION NUMBERS (BABSAN) CAN NOW BE SEARCHED, SELECTED AND TRANSFERRED.
* NEW DISPLAY FORMATS ALLREF, ALLP AND BABSAN SHOW ALL REFERENCES, ALL PATENT REFERENCES, OR ALL BABS ACCESSION NUMBERS FOR A COMPOUND AT A GLANCE.

FILE BABS

FILE LAST UPDATED: 10 JAN 2006 <20060110/UP>
FILE COVERS 1980 TO DATE.

FILE MEDLINE

FILE LAST UPDATED: 9 MAR 2006 (20060309/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 is now (26 Feb.) available. For details on the 2006 reload, enter HELP RLOAD at an arrow prompt (=>).

See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS

FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 9 March 2006 (20060309/ED)

FILE EMBASE

FILE COVERS 1974 TO 3 Mar 2006 (20060303/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE PASCAL

FILE LAST UPDATED: 6 MAR 2006 <20060306/UP>

FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

FILE JICST-EPLUS

FILE COVERS 1985 TO 7 MAR 2006 (20060307/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED
TERM (/CT) THESAURUS RELOAD.

FILE SCISEARCH

FILE COVERS 1974 TO 9 Mar 2006 (20060309/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

FILE CONF

FILE LAST UPDATED: 23 DEC 2005 <20051223/UP>

FILE COVERS 1976 TO 2005.

<<< CONF IS NO LONGER BEING UPDATED AS OF JANUARY 2006 >>>

FILE CONFSCI

FILE COVERS 1973 TO 25 May 2005 (20050525/ED)

CSA has suspended updates until further notice.

FILE DISSABS

FILE COVERS 1861 TO 24 FEB 2006 (20060224/ED)

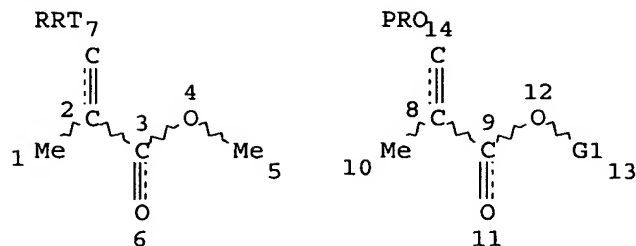
Only fair use as provided by the United States copyright law is permitted. PROQUEST INFORMATION AND LEARNING COMPANY MAKES NO WARRANTY REGARDING THE ACCURACY, COMPLETENESS OR TIMELINESS OF THE LICENSED MATERIALS OR ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SHALL NOT BE LIABLE FOR DAMAGES OF ANY KIND OR LOST PROFITS OR OTHER CLAIMS RELATED TO THE LICENSED MATERIALS OR THEIR USE.

=>

THIS PAGE BLANK (USPTO)

=> d que stat 143

L6 (STR)



Ak @15 Cy @16

VAR G1=15/16

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M2 C AT 15

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L19 QUE ABB=ON PLU=ON ?TRANSESTER? OR (TRANS(1W)ESTER?) OR (ESTER(2A)?EXCHANG?)

L24 QUE ABB=ON PLU=ON ?AZEOTROP?

L25 QUE ABB=ON PLU=ON ?ALCOHOL? OR ?ALKANOL? OR ?PHENOL?

L26 QUE ABB=ON PLU=ON ?POLYOL? OR (POLY(1W)OL) OR ?ALKAN(1W)OL

L27 QUE ABB=ON PLU=ON DIOL OR TRIOL OR GLYCOL OR (DI(1W)OL) OR (TRI(1W)OL)

L29 QUE ABB=ON PLU=ON AZEO(1W)TROP?

L33 77 SEA FILE=CASREACT SSS FUL L6 (365 REACTIONS)

L34 75 SEA FILE=CASREACT ABB=ON PLU=ON L33/COM

L35 74 SEA FILE=CASREACT ABB=ON PLU=ON L34 AND (AY<2005 OR PY<2005 OR PRY<2005 OR MY<2005 OR REVIEW/DT)

L36 47 SEA FILE=CASREACT ABB=ON PLU=ON L35 AND L19

L37 31 SEA FILE=CASREACT ABB=ON PLU=ON L36 AND (L25 OR L26 OR L27)

L38 10 SEA FILE=CASREACT ABB=ON PLU=ON L36 AND (L24 OR L29)

L40 QUE ABB=ON PLU=ON ?DISTIL?

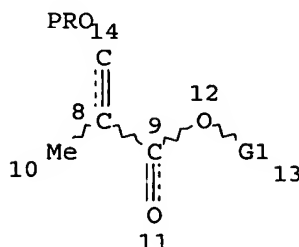
L41 1 SEA FILE=CASREACT ABB=ON PLU=ON L37 AND L40

L42 7 SEA FILE=CASREACT ABB=ON PLU=ON L37 AND L38

L43 11 SEA FILE=CASREACT ABB=ON PLU=ON L38 OR L41 OR L42

=> d que stat 146

L45 (STR)



Ak @15 Cy @16

Me✓OH
19 20

ECOUNT IS M2 C AT 15

NUMBER OF NODES IS 20

```
L46      0 SEA FILE=CHEMINFORMRX SSS SAM L45 (      0 REACTIONS)
```

43.2% DONE 1000 VERIFIED 0 HIT RXNS 0 DOCS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.09

FULL FILE PROJECTIONS: ONLINE **INCOMPLETE**
BATCH **COMPLETE**

PROJECTED VERIFICATIONS: 43442 TO 49118
PROJECTED ANSWERS: 0 TO 0

=> d que stat 131

```

L17 (      71931)SEA FILE=REGISTRY ABB=ON  PLU=ON  80-62-6/RN,CRN
L18 (      162911)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17
L19          QUE  ABB=ON  PLU=ON  ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
          (ESTER(2A)?EXCHANG?)
L20 (      13287)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 (L) RACT+NT/RL
L21          QUE  ABB=ON  PLU=ON  TRANSESTERIFICATION+PFT,OLD,NT/CT
L22 (      472)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 (L) L19
L23 (      429)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND (L21 OR L22)
L24          QUE  ABB=ON  PLU=ON  ?AZEOTROP?
L25          QUE  ABB=ON  PLU=ON  ?ALCOHOL? OR ?ALKANOL? OR ?PHENOL?
L26          QUE  ABB=ON  PLU=ON  ?POLYOL? OR (POLY(1W)OL) OR ?ALKAN(1
          W)OL
L27          QUE  ABB=ON  PLU=ON  DIOL OR TRIOL OR GLYCOL OR (DI(1W)OL
          ) OR (TRI(1W)OL)
L28 (      296)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23 AND (L25 OR L26 OR L27)
L29          QUE  ABB=ON  PLU=ON  AZEO(1W)TROP?
L30 (      49)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND (L24 OR L29)
L31      49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 AND (AY<2005 OR PY<2005

```

OR PRY<2005 OR MY<2005 OR REVIEW/DT)

=> d que stat 155

L49 3239 SEA FILE=BEILSTEIN ABB=ON PLU=ON 605459/RX.RBRN
L51 1844 SEA FILE=BEILSTEIN ABB=ON PLU=ON 1098229/RX.PBRN
L52 2 SEA FILE=BEILSTEIN ABB=ON PLU=ON L49 AND L51
L53 2 SEA FILE=BEILSTEIN ABB=ON PLU=ON L49 AND (?TRANSESTER?/BIRX
OR (TRANS/BIRX(1W)ESTER?/BIRX) OR (ESTER/BIRX(2A)?EXCHANG?/BIRX
))
L54 20 SEA FILE=BEILSTEIN ABB=ON PLU=ON L49 AND (?TRANSESTER?/RX OR
(TRANS/RX(1W)ESTER?/RX) OR (ESTER/RX(2A)?EXCHANG?/RX))
L55 22 SEA FILE=BEILSTEIN ABB=ON PLU=ON (L52 OR L53 OR L54)

=> d que stat 158

L24 QUE ABB=ON PLU=ON ?AZEOTROP?
L29 QUE ABB=ON PLU=ON AZEO(1W)TROP?
L56 18 SEA FILE=BABS ABB=ON PLU=ON (6010684/AN OR 6054637/AN OR
6408912/AN OR 5501182/AN OR 5575544/AN OR 5596056/AN OR
5648444/AN OR 5710950/AN OR 5872310/AN OR 5897892/AN OR
5901578/AN OR 6012519/AN OR 6147901/AN OR 6245983/AN OR
6311692/AN OR 6334922/AN OR 6350376/AN OR 6399852/AN)
L57 18 SEA FILE=BABS ABB=ON PLU=ON L56 AND (AY<2005 OR PY<2005 OR
PRY<2005 OR MY<2005 OR REVIEW/DT)
L58 0 SEA FILE=BABS ABB=ON PLU=ON L57 AND (L24 OR L29)

=> dup rem 143 131 146 158

L46 HAS NO ANSWERS

L58 HAS NO ANSWERS

DUPLICATE IS NOT AVAILABLE IN 'CHEMINFORMRX'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE

FILE 'CASREACT' ENTERED AT 08:28:47 ON 10 MAR 2006

USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'HCAPLUS' ENTERED AT 08:28:47 ON 10 MAR 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

PROCESSING COMPLETED FOR L43

PROCESSING COMPLETED FOR L31

PROCESSING COMPLETED FOR L46

PROCESSING COMPLETED FOR L58

L66 52 DUP REM L43 L31 L46 L58 (8 DUPLICATES REMOVED)

ANSWERS '1-11' FROM FILE CASREACT

ANSWERS '12-52' FROM FILE HCAPLUS

=> file stnguide

FILE 'STNGUIDE' ENTERED AT 08:28:54 ON 10 MAR 2006

USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE

AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Mar 3, 2006 (20060303/UP).

=> d ibib ed ab fhit

YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS, CASREACT' - CONTINUE? (Y)/N:y

'ED' IS NOT A VALID FORMAT

In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.

REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ibib ab fhlt

L66 ANSWER 1 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 141:206826 CASREACT

TITLE: Process for the preparation of methacrylic ester

INVENTOR(S): Doi, Junichi; Satou, Yoshihiko; Taniguchi, Yoshiyuki; Tokuda, Masanori

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

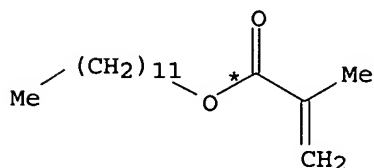
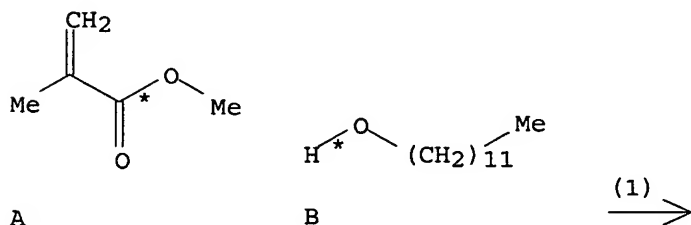
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004069783	A1	20040819	WO 2004-JP1036	20040203
W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.: JP 2003-30671 20030207

AB A process for producing a methacrylic ester which comprises subjecting Me methacrylate and alc. or phenol to transesterification in a reactor equipped with a distillation column while removing from the system the byproduct methanol as an **azeotropic** mixture with Me methacrylate with refluxing, wherein after the temps. in the uppermost section, intermediate section, and lowermost section in the distillation column reached 63 to 68 °C, 68 to 90 °C, and 90 to 100 °C, resp., in terms of temperature at ordinary pressure, the removal of the **azeotropic** mixture of methanol and Me methacrylate from the system is initiated and the refluxing ratio is regulated so as to maintain such temps. in the distillation column throughout the period in which the conversion of the alc. or phenol is in the range of 0 to 95%. For example, a mixture of Me methacrylate (1051.3 g), lauryl alc. (652.2 g), 4-acetylamino-2,2,6,6-tetramethylpiperidin N-oxide (0.04 g) was heated for 1 h., then cooled. After addition of tetramethyltitanate (0.86 g), the resulting mixture was stirred at reflux with providing 4-acetylamino-2,2,6,6-tetramethylpiperidineN-oxide/methyl methacrylate (1000 ppm) at a rate of 2 mL/h, while removing methanol as an **azeotropic** mixture with Me methacrylate for 3 h. Wherein, refluxing ratio was regulated so as to maintain 64-65 °C, 70-80 °C, and 99-100°C, resp. in the uppermost section, intermediate section, and lowermost section in the

distillation column. Then, temperature in the uppermost section, intermediate and lowermost section were controlled to >95 °C, >99 °C, resp. (refluxing ratio = 0) to remove methanol. After 4 h, the reaction mixture (1485.8 g) was analyzed by gas chromatog. to show Me methacrylate (40.1%), lauryl alc. (0.13%) and lauryl methacrylate (59.0%).

RX(1) OF 2 A + B ==> C



C
YIELD 98%

RX(1) RCT A 80-62-6, B 112-53-8

STAGE(1)

CAT 14691-89-5 1-Piperidinyloxy, 4-(acetylamino)-2,2,6,6-tetramethyl-
CON SUBSTAGE(1) room temperature -> reflux
SUBSTAGE(2) 1 hour, reflux

STAGE(2)

CAT 992-92-7 Methanol, titanium(4+) salt
CON SUBSTAGE(1) 111 - 129 deg C
SUBSTAGE(2) 3 hours, reflux
SUBSTAGE(3) 4 hours, reflux

PRO C 142-90-5

=> d ibib ab fhit 2-11

YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS, CASREACT' - CONTINUE? (Y)/N:y

L66 [ANSWER 2 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 114:121500 CASREACT

TITLE: Method of obtaining carboxylic esters

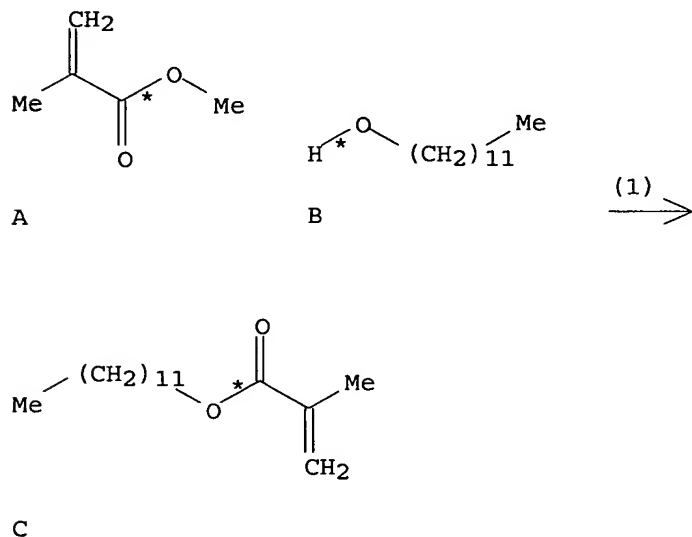
INVENTOR(S): Pawlowski, Witold; Kazmierowicz, Wiktor; Kaim,

PATENT ASSIGNEE(S): Andrzej; Smolka, Grzegorz
 Instytut Chemii Przemyslowej, Pol.; Uniwersytet
 Warszawski
 SOURCE: Pol., 3 pp.
 CODEN: POXXA7
 DOCUMENT TYPE: Patent
 LANGUAGE: Polish
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 147729	B1	19890731	PL 1985-252596	19850327
PRIORITY APPLN. INFO.:			PL 1985-252596	19850327

AB Carboxylic esters are prepared by **transesterification** of Me esters with C3-22 alcs. in the presence of H₂O in a hydrocarbon solvent which forms an **azeotrope** with MeOH. Thus, a mixture of CH₂:CMeCO₂Me, Me(CH₂)₁₀CH₂OH, cyclohexanone, hydroquinone, and PhSO₃H were heated to b.p. of the mixture, followed by treatment with H₂O, than removing MeOH from the reactions mixture to give 99% CH₂:CMeCO₂CH₂(CH₂)₁₀Me.

RX(1) OF 1 A + B ==> C



RX(1) RCT A 80-62-6, B 112-53-8
 PRO C 142-90-5

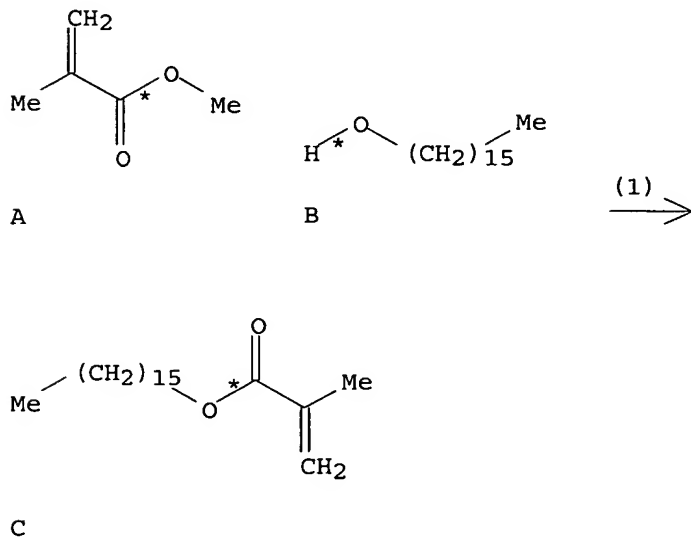
L66 ANSWER 3 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 3
 ACCESSION NUMBER: 112:159149 CASREACT
 TITLE: Manufacture of (methyl)acrylate esters by **transesterification** and catalyst decomposition with mineral acids
 INVENTOR(S): Beranek, Jan; Machova, Marta; Havel, Miroslav; Seifert, Jan
 PATENT ASSIGNEE(S): Czech.
 SOURCE: Czech., 6 pp.
 CODEN: CZXXA9

DOCUMENT TYPE: Patent
 LANGUAGE: Czech
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 262252	B1	19890314	CS 1986-5897	19860807
PRIORITY APPLN. INFO.:			CS 1986-5897	19860807

AB The conventional Mg(OMe)₂-catalyzed reesterification of CH₂:C(R)CO₂R' (R = H, Me; R' = Me, Et) with higher aliphatic or aralkyl alcs. is improved by conducting a final decomposition of the catalyst with H₂SO₄ or H₃PO₄ and water which facilitates workup of the reaction mixture, decreases contamination of the organic phase, and increases product yield and purity. Thus, a mixture of Alfol 1618, CH₂:CMeCO₂Me (I), cyclohexane, and a com. polymerization inhibitor (Permanax) was **azeotropically** dried in a packed column, treated at 70° with a solution of Mg in MeOH, and rectified 6 h with separation of MeOH. The residual mixture was stirred at 25° with consecutive addition of H₂SO₄ and 278 mL distilled water, heated at 60°, the aqueous bottom phase was separated, the organic top phase (containing <0.001% Mg, 0.1% H₂SO₄, 0.2% I, and 0.01% cyclohexane) was solvent-stripped and dried to yield 98% of a mixture of hexadecyl and octadecyl methacrylates containing <2% free alcs. and 0.5% I.

RX(1) OF 2 A + B ==> C



RX(1) RCT A 80-62-6, B 36653-82-4
 PRO C 2495-27-4

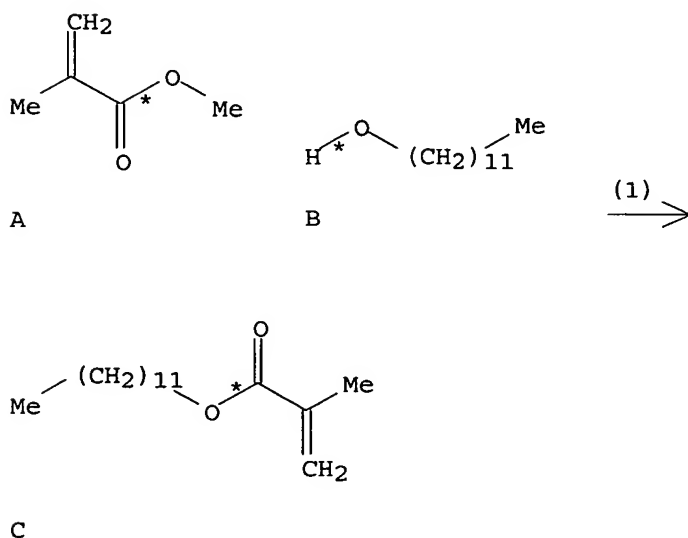
L66 ANSWER 4 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 4
 ACCESSION NUMBER: 111:97939 CASREACT
 TITLE: Method of preparing acrylic and methacrylic acid esters
 INVENTOR(S): Beranek, Jan; Seifert, Jan; Benes, Radomir; Kantor, Milan

PATENT ASSIGNEE(S): Czech.
 SOURCE: Czech., 5 pp.
 CODEN: CZXXA9
 DOCUMENT TYPE: Patent
 LANGUAGE: Czech
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 259635	B1	19881014	CS 1987-1798	19870317
PRIORITY APPLN. INFO.:			CS 1987-1798	19870317

AB The **transesterification** of Me and Et (meth)acrylates with higher alcs. was catalyzed by Mg(OMe)₂ which is more easily removed than the traditional Ti catalysts. Side reactions are suppressed by application of color-stable polymerization inhibitors. Thus, a mixture of Alfol-1214 (mixture of lauryl- and myristyl alc.), CH₂:CMeCO₂Me (I), cyclohexane, 2,6-di-tert-butyl-p-cresol, and tert-butylpyrocatechol was dehydrated **azeotropically** and a suspension of Mg in MeOH was added at 70°. The mixture was refluxed 4 h with separation of MeOH, the catalyst was decompose with dilute H₂SO₄ and extracted, the solvents and I were steam-stripped, and the ester was dried to yield 97.5% lauryl and myristyl methacrylate containing <1.5% free alcs. and <1% I, free of polymers. The color was <90 Hazen units.

RX(1) OF 2 A + B ==> C



RX(1) RCT A 80-62-6, B 112-53-8
 PRO C 142-90-5

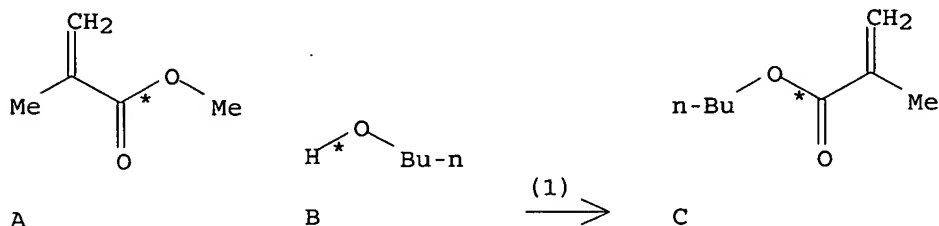
L66 ANSWER 5 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 5
 ACCESSION NUMBER: 111:115916 CASREACT
 TITLE: Preparation of (meth)acrylic acid esters by **transesterification**
 INVENTOR(S): Beranek, Jan; Gutwirth, Karel; Machova, Marta; Benes,

PATENT ASSIGNEE(S): Radek; Kantor, Milan
 SOURCE: Czech.
 CODEN: CZXXA9
 DOCUMENT TYPE: Patent
 LANGUAGE: Czech
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 259632	B1	19881014	CS 1987-1241	19870225
PRIORITY APPLN. INFO.: /			CS 1987-1241	19870225

AB The transesterification of CH₂:CRCO₂R₁ (R = H, Me, R₁ = Me, Et) with higher aliphatic or cycloaliph. alcs. and glycols is catalyzed by Mg(OMe)₂, which is easy to remove as MgCO₃. Thus, a mixture of Alfol 1620 (cetyl and stearyl alc.) 434, CH₂:CMeCO₂Me (I) 194, cyclohexane 333, and phenyl-β-naphthylamine (polymerization inhibitor) 1 g was azeotropically dehydrated; a suspension of 0.7 g Mg in 14 g MeOH was added at 70°; and the mixture was refluxed 4 h with separation of MeOH. The residual solution was diluted with 4 g water and treated 15 min with 172 mL/min CO₂, which was heated to 95° in a hot washing bottle. Residual CO₂ was flushed with air, precipitated MgCO₃ was filtered with kieselguhr, and solvents and I were steam-stripped to give 98% cetyl-stearyl methacrylate containing <2% alcoholates and <0.5% I. The filter cake containing 70% MgCO₃ was utilized as a fertilizer component.

RX(1) OF 4 A + B ==> C



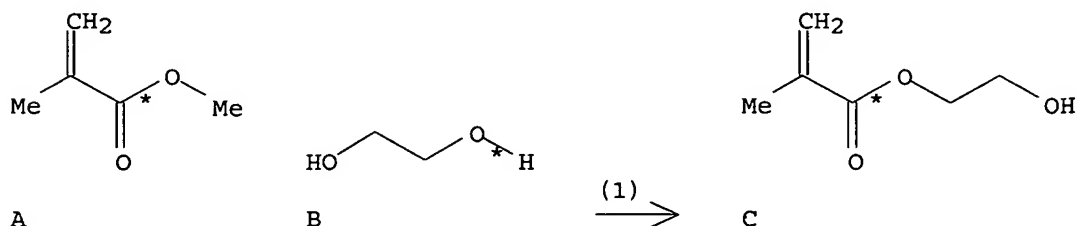
RX(1) RCT A 80-62-6, B 71-36-3
 PRO C 97-88-1

L66 ANSWER 6 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 6
 ACCESSION NUMBER: 111:154544 CASREACT
 TITLE: Method and apparatus for 2-hydroxyethyl methacrylate manufacture
 INVENTOR(S): Vesely, Vaclav; Heyberger, Ales; Cermak, Jan; Senkyrova, Jarmila
 PATENT ASSIGNEE(S): Czech.
 SOURCE: Czech., 6 pp.
 CODEN: CZXXA9
 DOCUMENT TYPE: Patent
 LANGUAGE: Czech
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

 CS 253632 B1 19871112 CS 1986-998 19860213
 PRIORITY APPLN. INFO.: CS 1986-998 19860213
 AB Base-catalyzed **transesterification** of alkyl methacrylates with
 HOCH₂CH₂OH (I) in the presence of C5-8 hydrocarbons, facilitating
azeotropic distillation of H₂O, gives increased yields of
 CH₂:CMeCO₂CH₂CH₂OH (II). Refluxing equal parts of I, CH₂:CMeCO₂Me (III),
 and hexane containing hydroquinone and MeONa for 80 min with distillation of
 aqueous
 MeOH gave a 92% III conversion and 78% selectivity for II. A diagram of
 the apparatus is shown.

RX(1) OF 2 A + B ==> C



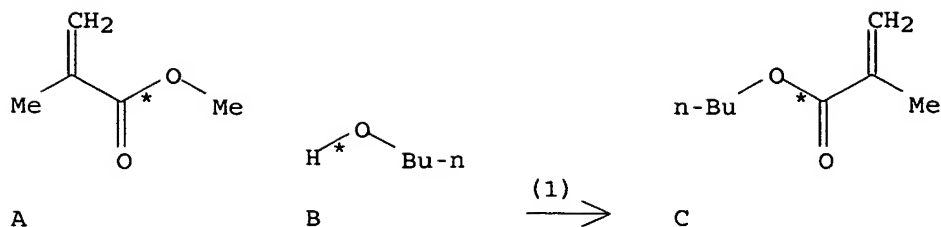
RX(1) RCT A 80-62-6, B 107-21-1
 PRO C 868-77-9

L66 ANSWER 7 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 7
 ACCESSION NUMBER: 108:187423 CASREACT
 TITLE: Preparation of higher alkyl (meth)acrylates by
 transesterification
 INVENTOR(S): Itoi, Akira; Yamauchi, Atsuro; Muranaka, Hidekazu
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63005055	A2	19880111	JP 1986-148054	19860626
PRIORITY APPLN. INFO.:			JP 1986-148054	19860626

AB Title esters useful as monomers for adhesives, coatings, etc. are prepared
 by **transesterification** of Me (meth)acrylate with ROH [R = C2-20
 (cyclo)alkyl] catalyzed by KHCO₃, RbHCO₃, and/or CsHCO₃. Thus, 148 g BuOH
 was heated with 500 g Me methacrylate (I) in the presence of 1.2 g KHCO₃
 and 1.5 g phenothiazine at 40-45°, distilling off MeOH as an
azeotrope with I, for 5 h. The system was then heated at 20 mm Hg
 to remove excess I, and the product distilled at 82-83° and 5 mm Hg to
 give 246 g Bu methacrylate in 87% yield (based on BuOH) and 99.5% purity.

RX(1) OF 1 A + B ==> C



RX(1) RCT A 80-62-6, B 71-36-3
 PRO C 97-88-1

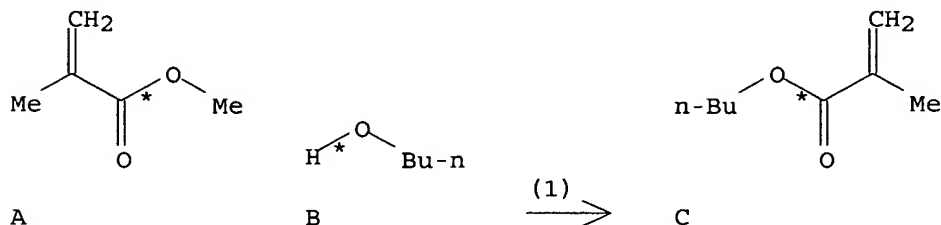
L66 ANSWER 8 OF 52 CASREACT COPYRIGHT 2006 ACS on STN DUPLICATE 8
 ACCESSION NUMBER: 109:38406 CASREACT
 TITLE: Preparation of higher alkyl (meth)acrylates by
transesterification
 INVENTOR(S): Itoi, Akira; Yamauchi, Atsuro; Muranaka, Hidekazu
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63005054	A2	19880111	JP 1986-148053	19860626
PRIORITY APPLN. INFO.:			JP 1986-148053	19860626

OTHER SOURCE(S): MARPAT 109:38406

AB Title esters useful as monomers for adhesives, coatings, etc., are prepared by **transesterification** of Me (meth)acrylate with ROH [R = C2-20 (cyclo)alkyl] catalyzed by Na3PO4, K3PO4, Rb3PO4, and/or their hydrates. Thus, 148 g BuOH was heated with 500 g Me methacrylate (I) in the presence of 1.5 g K3PO4 hydrate and 1.5 g phenothiazine at 300 mm Hg with distillation of byproduct MeOH as an **azeotrope** with I. The system was then heated at 5 mm Hg to remove excess I, and the product was distilled at 82-83° and 5 mm Hg to give 245 g Bu methacrylate in 86.5% yield (based on BuOH) and 99.5% purity.

RX(1) OF 1 A + B ==> C



RX(1) RCT A 80-62-6, B 71-36-3
 PRO C 97-88-1

L66 ANSWER 9 OF 52 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 111:215088 CASREACT

TITLE: Manufacture of 2-hydroxyethyl methacrylate by
transesterificationINVENTOR(S): Vesely, Vaclav; Heyberger, Ales; Cermak, Jan; Rylek,
Milan; Senkyrova, Jarmila

PATENT ASSIGNEE(S): Czech.

SOURCE: Czech., 3 pp.

CODEN: CZXXA9

DOCUMENT TYPE: Patent

LANGUAGE: Czech

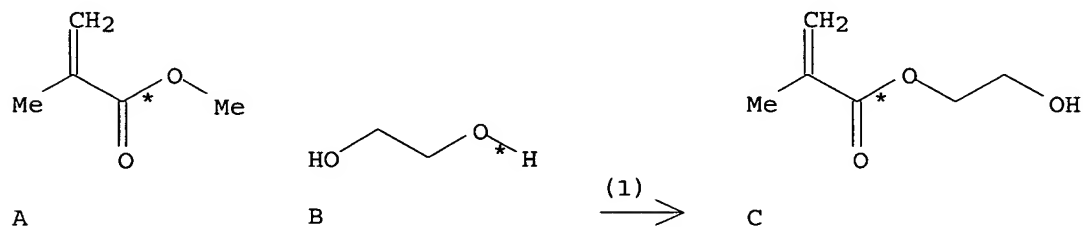
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 260603	B1	19890112	CS 1987-2	19870103
PRIORITY APPLN. INFO.:			CS 1987-2	19870103

AB Conversion of Me methacrylate (I) and selectivity for the title compound in the **transesterification** with ethylene glycol in the presence of hydroquinone polymerization inhibitor and MeONa catalysts were increased to 86% and 78%, resp., by separating MeOH from the **distillate** and recycling unreacted I.

RX(1) OF 1 A + B ==> C



RX(1) RCT A 80-62-6, B 107-21-1
 PRO C 868-77-9

L66 ANSWER 10 OF 52 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 52:15543 CASREACT

TITLE: Base-catalyzed reaction of 2-alkylaminoethanols with
acrylic and methacrylic esters

AUTHOR(S): Sims, Homer J.; de Benneville, Peter L.; Kresge, A. J.

CORPORATE SOURCE: Rohm & Haas Co., Philadelphia, PA

SOURCE: Journal of Organic Chemistry (1957), 22,
787-9

CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Reaction of RNHCH₂CH₂OH (I) with CH₂:CMeCO₂Me (II) in the presence of (iso-PrO)₃Al gave H₂C:CR'CO₂CH₂CH₂NHR (III); with 2-tert-alkylaminoethanols it gave the corresponding ester; with less branched 2-alkylaminoethanols, it led to high-boiling mixts., owing to a predominance of amide-forming side reactions. II (100 g.), 0.5 mole I,

6.7 g. bi- β -naphthol (IV) inhibitor, and 1 g. (iso-PrO)₃Al refluxed and distilled 24 hrs. through a 6 in. Vigreux column with a total reflux-partial take-off stillhead, the MeOH-II azeotrope collected at 65° (stillhead temperature) with distillation temperature kept

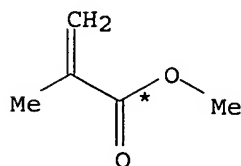
below

70° and the distillate (80% MeOH) redistd. through a 12 in. packed column gave fractions recorded on the basis of g./100 g. I [I, fraction, weight, b.p., NE (neutralization equivalent weight by acid titration), HE (hydrogenation equivalent weight by quant. hydrogenation), % N given]: Ia (I,

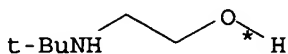
R =

Me), a, 10 g., b1.0 44-58°, 257, 359, 8.1; b, 22 g., b0.8 58-123°, 495, 141, 7.7; c, 15.9 g., b0.8 123°, 1829, 167, 7.3; d, 20.7 g., b1.0 123-6°, 1735, 150, 7.1; e, 16.0 g., b1.5 126-45°, 831, 135, 7.4; f, residue 83 g. Ib (I, R = Me₂CH), a, 13.8 g., b28 99-113°, -, -, 11.2; b, 19 g., b28 115°, 221, 285, 9.0; c, 3.5 g., b28 115-55°, -, -, -; d, 30.2 g., b28 155-85°, 821, 257, 6.6; e, 10.0 g., b28 185°, -, -, 6.4; f, residue 70.5 g. Ic (I, R = Me₃C), a, 19.5 g., b30 105-16°, 165, -, 8.5; b, 20.4 g., b30 117°, 183, -, 7.8; c, 56 g., b30 120°, 185, 198, 7.5; d, 6.0 g., b30 122°, 190, 181, 7.5; e, 11.0 g., b30 122-7°, 242, 155, 5.6; f, residue 19.0 g.; the combined fractions b, c, and d distilled at 117-22°/30 mm. yielded 52-80% IIIa (III, R' = Me, R = Me₃C) from Ic. Reactions were carried out in essentially the same manner using NaOMe or (Me₃CO)₄Ti. Metallic Na used as catalyst was dissolved in Ic prior to the addition of II. Ic (58.5 g.), 86 g. H₂C:CHCO₂Me, 7.2 g. IV, and 1 g. (iso-PrO)₃Al distilled 10 hrs. gave 29 g. fraction, b. 65-78°. Distillation was continued in vacuo and the product (50 g., b13 90-100°) redistd. to give tert-butylaminoethyl acrylate (IIIb) (III, R' = H, R = Me₃C). H₂C:CHCO₂Et (200 g.), 14 g. IV, 173 g. Me₃CCCH₂CMe₂NHCH₂CH₂OH (cf. Bortnick, et al., C.A. 51, 1117e), and 2 g. (iso-PrO)₃Al was distilled 21 hrs. to give 53 g. product b. 74-80°, the temperature raised, 74 g. excess H₂C:CHCO₂Et collected, and the remainder distilled in vacuo to give 139 g. 2-(1,1,3,3-tetramethylbutyl)aminoethyl acrylate (IIIc) (III, R' = Me, R = C₈H₁₇), b25 140-7°. Similarly, II gave 63% of the corresponding methacrylate (IIId) (III, R' = Me, R = C₈H₁₇), b9 125-32°. Data for the 2-tertalkylaminoethyl esters, III, were tabulated (III, R', R, % yield, b.p./mm., n₂₅D, d₂₅, NE, HE given): IIIa, Me, Me₃C, 80, 100-5°/12, 1.4401, 0.9165, 185, 192; IIIb, H, Me₃C, 66, 84-7°/12, 1.4396, 0.9305, 166, 176; IIIc, H, C₈H₁₇, 43, 129-31°/12, 1.4520, 0.9175, 224, 228; IIId, Me, C₈H₁₇, 63, 135-8°/12, 1.4535, 0.9130, 241, 254. IIIa was stable to 6 months storage at 0° and appeared to be considerably more stable than other reported 2-alkylaminoethyl esters. These new monomers could be polymerized in solution or in bulk by heating with a small amount of azoisobutyronitrile initiator. IIIa gave a hard, colorless, transparent polymer under these conditions.

RX(1) OF 1 A + B ==> C

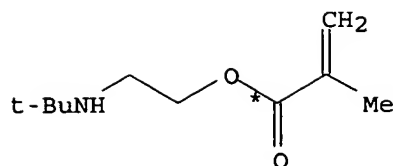


A



B





C
YIELD 80%

RX(1) RCT A 80-62-6, B 4620-70-6
RGT D 555-31-7 Al isopropoxide, E 582-17-2 2,7-Naphthalenediol
PRO C 3775-90-4
NTE Classification: **Transesterification**; O-Acylation; #
Conditions: (i-PrO)₃Al; 2,7-naphthalenediol; R_f <75 deg; distil
24h

L66 ANSWER 11 OF 52 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 50:19978 CASREACT

TITLE: The preparation of the cyclopentyl esters of acrylic, methacrylic, and crotonic acids

AUTHOR(S): Lal, Joginder; Green, Richard

CORPORATE SOURCE: H. D. Justi & Son, Philadelphia, PA

SOURCE: Journal of Organic Chemistry (1955), 20, 397-9

CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

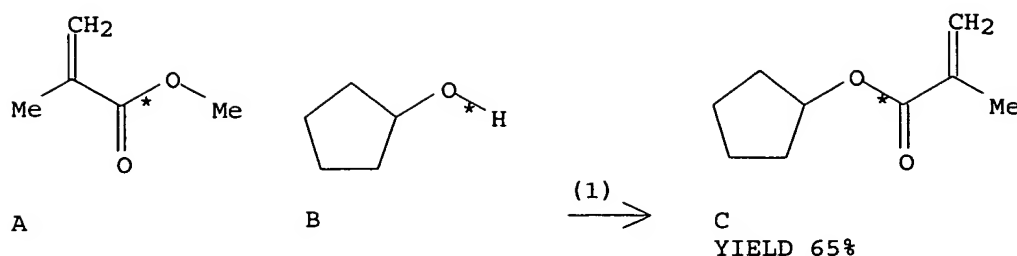
LANGUAGE: Unavailable

AB Refluxing 47.3 g. glacial methacrylic acid, 43 g. cyclopentanol (I), 2 g. hydroquinone (II), 2 g. p-MeC₆H₄SO₃H (III), and 80 cc. C₆H₆ with a H₂O-trap, adding 0.5 g. di-2-naphthyl-p-phenylenediamine to the washed C₆H₆ solution, and fractionally distilling the residue of the C₆H₆ solution gives

72% cyclopentyl methacrylate (IV), b₂₇ 84-5°, n_D25 1.4504, d₂₅ 0.9640. IV, b₂₃ 71-3° is also obtained in 65% yield when 86 g. I, 250 g. Me acrylate (V), 3 g. II, and 3 g. III are refluxed with simultaneous distillation of MeOH and V as an azeotropic mixture, and, in 58% yield, when 52.25 g. methacrylyl chloride is added dropwise to 43 g. I in 100 cc. H₂O containing 20 g. NaOH at below 5°. Acrylic acid (79.2 g.), 86 g. I, 2 g. II, 2 g. III, and 200 cc. C₆H₆ refluxed with a H₂O-trap gives 81.4% cyclopentyl acrylate, b₃₁ 75-6°, n_D25 1.4500, d₂₅ 0.9801, which is also obtained in 60.7% yield when 86 g. I, 250 g. Et acrylate (VI), 3 g. EtONa, and 3 g. II are refluxed with simultaneous distillation of the EtOH and VI. Refluxing 47.5 g. crotonic acid, 43 g. I, 3

g. II, 3 g. alkanesulfonic acid mixture, and 100 cc. C₆H₆ with a H₂O-trap gives 67.5% cyclopentyl crotonate, b₁₅ 84-5°, n_D25 1.4562, d₂₅ 0.9699.

RX(1) OF 3 A + B ==> C



RX(1) RCT A 80-62-6, B 96-41-3
 RGT D 104-15-4 TsOH
 PRO C 16868-14-7
 NTE Classification: Transesterification; Alkoxylation; #
 Conditions: cyclopentanol TsOH; [distil off MeOH]

=> d ibib ed ab hitind hitstr 12-52

YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS', CASREACT' - CONTINUE? (Y)/N:y

L66 ANSWER 12 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1198344 HCAPLUS

DOCUMENT NUMBER: 143:422761

TITLE: Manufacture of (meth)allyl (meth)acrylate by transesterification

INVENTOR(S): Tamura, Kimio; Suzuki, Shinshi

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan; Osaka Yuki Kagaku Kogyo Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005314247	A2	20051110	JP 2004-131622	20040427 <--
PRIORITY APPLN. INFO.:			JP 2004-131622	20040427 <--

OTHER SOURCE(S): MARPAT 143:422761

ED Entered STN: 11 Nov 2005

AB Title compds. are manufactured by transesterification of CH₂:CR₁CH₂OH (R₁ = H, Me) with Me (meth)acrylate, wherein the reaction is stopped when alc. conversion reaches to 75-90%. Unreacted alcs. in the products may be recovered as azeotropic mixts. and reused as reactants. Thus, Me methacrylate was transesterified with allyl alc. in n-hexane in the presence of Bu₂SnO and N-phenyl-N'-(1,3-dimethylbutyl)-p-phenylenediamine at 85-100° for 15 h while removing MeOH and hexane by distillation, and the product was purified by distillation to give 72.8% allyl methacrylate of 99.96% purity.

IC ICM C07C067-03

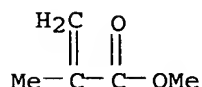
ICS C07C069-533; C07B061-00

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23

IT Transesterification

(manufacture of (meth)allyl (meth)acrylate by transesterification)
 IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate
 107-18-6, Allyl alcohol, reactions 513-42-8, Methallyl
 alcohol
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of (meth)allyl (meth)acrylate by transesterification)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of (meth)allyl (meth)acrylate by transesterification)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 13 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:549687 HCAPLUS
 DOCUMENT NUMBER: 141:72031
 TITLE: Manufacture of (meth)acrylic acid esters using
 azeotropic solvents with high yield
 INVENTOR(S): Tokuda, Masanori; Fukui, Tomoki; Sakai, Haruo
 PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004189650	A2	20040708	JP 2002-358005	20021210 <--
PRIORITY APPLN. INFO.:			JP 2002-358005	20021210 <--

ED Entered STN: 09 Jul 2004
 AB Title esters are manufactured by transesterification of alkyl (meth)acrylates with **alcs.** in the presence of **azeotropic** solvents in a distillation column reactor while distilling out generated alkyl **alcs.** and the solvents from the top of the column at a temperature $\leq 2^\circ$ higher than the **azeotropic** temperature, and also while keeping the column bottom temperature at $\leq 10^\circ$ lower than the b.p. of the solvents. Thus, Me methacrylate (b.p. 100.8°) was transesterified with BuOH in the presence of $\text{Ti}(\text{OBu})_4$ and phenothiazine at column top temperature 65.0° and bottom temperature $93-101^\circ$ for 2.5 h to give 97.4% Bu methacrylate.
 IC ICM C07C067-03
 ICS C07C067-54; C07C069-54; C07B061-00
 CC 35-2 (Chemistry of Synthetic High Polymers)
 ST butyl methacrylate manuf **azeotropic** distn; **azeotropic** solvent methyl methacrylate transesterification butanol
 IT Distillation
 Solvents
 (**azeotropic**; manufacture of (meth)acrylic acid esters by transesterification by **azeotropic** distillation at specific temperature)
 IT Reactors
 (column; manufacture of (meth)acrylic acid esters by transesterification by **azeotropic** distillation at specific temperature)

IT **Transesterification**
 (manufacture of (meth)acrylic acid esters by transesterification by
azeotropic distillation at specific temperature)

IT 97-88-1P, Butyl methacrylate 2439-35-2P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of (meth)acrylic acid esters by transesterification by
azeotropic distillation at specific temperature)

IT 110-54-3, n-Hexane, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (manufacture of (meth)acrylic acid esters by transesterification by
azeotropic distillation at specific temperature)

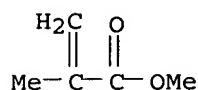
IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT
 (Reactant or reagent); USES (Uses)
 (manufacture of (meth)acrylic acid esters by transesterification
 by **azeotropic** distillation at specific temperature)

IT 108-01-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of acrylate by transesterification with **azeotropic**
 distillation)

IT 80-62-6, Methyl methacrylate
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT
 (Reactant or reagent); USES (Uses)
 (manufacture of (meth)acrylic acid esters by transesterification
 by **azeotropic** distillation at specific temperature)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 /ANSWER 14 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:587918 HCAPLUS

DOCUMENT NUMBER: 141:124115

TITLE: Transesterification procedure for the continuous
 production of alkyl (meth)acrylates from methyl
 (meth)acrylates with repeated catalyst recycling

INVENTOR(S): Ackermann, Jochen; Hiltner, Horst; Siegert, Hermann

PATENT ASSIGNEE(S): Roehm GmbH & Co. KG, Germany

SOURCE: Ger. Offen., 16 pp.
 CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

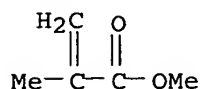
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10301007	A1	20040722	DE 2003-10301007	20030113 <--
CA 2512628	AA	20040729	CA 2003-2512628	20031121 <--
WO 2004063140	A1	20040729	WO 2003-EP13060	20031121 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM,
 HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
 LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG,
 PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,

TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 EP 1583733 A1 20051012 EP 2003-775379 20031121 <--
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
 CN 1738790 A 20060222 CN 2003-80108705 20031121 <--
 PRIORITY APPLN. INFO.: DE 2003-10301007 A 20030113 <--
 WO 2003-EP13060 W 20031121 <--
 OTHER SOURCE(S): MARPAT 141:124115
 ED Entered STN: 23 Jul 2004
 AB An procedure for the continuous production of alkyl (meth)acrylates (e.g.,
 iso-Bu methacrylate) by the continuous catalytic transesterification of Me
 (meth)acrylates with high-boiling alcs. (e.g., isobutanol) is
 described. A very high space-time velocity and product yield can be
 achieved. This process enables the reuse of homogeneous
 transesterification catalyst several times and thus reduces the excipient
 costs; process flow diagrams are presented.
 IC ICM C07C067-02
 ICS C07C069-54
 CC 35-2 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 23, 48, 67
 IT Distillation
 (azeotropic; transesterification procedure for the continuous
 production of alkyl (meth)acrylates with repeated catalyst recycling using)
 IT **Alcohols, reactions**
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical
 process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (high-boiling; transesterification procedure for the continuous production
 of alkyl (meth)acrylates with repeated catalyst recycling)
 IT **Transesterification**
 (transesterification procedure for the continuous production of alkyl
 (meth)acrylates with repeated catalyst recycling)
 IT 71-36-3, 1-Butanol, reactions 78-83-1, Isobutanol, reactions
 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate
 104-76-7, 2-Ethylhexanol
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical
 process); RCT (Reactant); PROC (Process); RACT (Reactant or
 reagent)
 (transesterification procedure for the continuous production of
 alkyl (meth)acrylates with repeated catalyst recycling using)
 IT 80-62-6, Methyl methacrylate
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical
 process); RCT (Reactant); PROC (Process); RACT (Reactant or
 reagent)
 (transesterification procedure for the continuous production of
 alkyl (meth)acrylates with repeated catalyst recycling using)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 15 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2003:532627 HCAPLUS
 DOCUMENT NUMBER: 139:85788
 TITLE: Transesterification method for the continuous
 production of alkyl (meth)acrylates from
 alcohols and methyl (meth)acrylates
 INVENTOR(S): Ackermann, Jochen; Gropp, Udo; Hiltner, Horst; Lausch,
 Hans-Rolf; Lunt-Rieg, Ingrid; Siegert, Hermann;
 Carloff, Ruediger
 PATENT ASSIGNEE(S): Roehm GmbH & Co. KG, Germany
 SOURCE: PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003055837	A1	20030710	WO 2002-EP13828	20021206 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10200171	A1	20030710	DE 2002-10200171	20020104 <--
AU 2002364281	A1	20030715	AU 2002-364281	20021206 <--
EP 1465859	A1	20041013	EP 2002-799053	20021206 <--
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
BR 2002015458	A	20041123	BR 2002-15458	20021206 <--
JP 2006503795	T2	20060202	JP 2003-556372	20021206 <--
US 2005119500	A1	20050602	US 2004-500288	20040629 <--
US 6977310	B2	20051220		

PRIORITY APPLN. INFO.: DE 2002-10200171 A 20020104 <--
 WO 2002-EP13828 W 20021206 <--

OTHER SOURCE(S): MARPAT 139:85788

ED Entered STN: 11 Jul 2003

AB A method for the continuous production of alkyl (meth)acrylates (e.g., Bu methacrylate) by the transesterification of Me (meth)acrylate with an alc. (e.g., 1-butanol) having a higher b.p. than methanol is described using azeotropic distillation for removal of the byproduct methanol and thin-film evaporation for recovery of the alkyl (meth)acrylate. A process flow diagram is presented.

IC ICM C07C067-03

ICS C07C069-54

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 48

IT Distillation

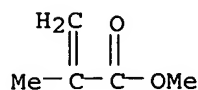
(azeotropic; used in a transesterification method for the continuous production of alkyl (meth)acrylates from alcs. and Me (meth)acrylates for methanol removal)

IT Evaporation

(film; used in a transesterification method for the continuous production

- of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates)
- IT **Transesterification**
(transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates)
- IT **Alcohols, reactions**
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates)
- IT Film evaporators
Polymerization inhibitors
(used in a transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates)
- IT Distillation columns
(used in a transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal)
- IT 71-36-3, 1-Butanol, reactions 78-83-1, Isobutanol, reactions 104-76-7, 2-Ethylhexanol
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(in a transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal via **azeotropic** distillation)
- IT 92-84-2, Phenothiazine 123-31-9, Hydroquinone, uses 150-76-5, Hydroquinone monomethyl ether 27213-78-1, tert-Butylcatechol
RL: CAT (Catalyst use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(polymerization inhibitor; in a transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal via **azeotropic** distillation)
- IT 67-56-1P, Methanol, preparation
RL: BYP (Byproduct); EPR (Engineering process); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PREP (Preparation); PROC (Process)
(transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal via **azeotropic** distillation)
- IT 97-86-9P, Isobutyl methacrylate 97-88-1P, Butyl methacrylate
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal via **azeotropic** distillation)
- IT 80-62-6, Methyl methacrylate
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal via **azeotropic** distillation)
- IT 80-62-6, Methyl methacrylate
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(transesterification method for the continuous production of alkyl (meth)acrylates from **alcs.** and Me (meth)acrylates for methanol removal via **azeotropic** distillation)

RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 16 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:330257 HCAPLUS

DOCUMENT NUMBER: 136:341140

TITLE: Transesterification process and catalysts for the preparation of methylcyclohexyl (meth)acrylates from alkyl (meth)acrylates and methylcyclohexanols in the presence of polymerization inhibitors

INVENTOR(S): Paul, Jean-Michel

PATENT ASSIGNEE(S): ATOFINA, Fr.

SOURCE: Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1201640	A1	20020502	EP 2001-402646	20011012 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
FR 2815631	A1	20020426	FR 2000-13672	20001025 <--
FR 2815631	B1	20031219		
TW 528749	B	20030421	TW 2001-90126103	20011023 <--
CN 1349972	A	20020522	CN 2001-137198	20011025 <--
JP 2002179619	A2	20020626	JP 2001-327457	20011025 <--
US 2002123643	A1	20020905	US 2001-983768	20011025 <--
PRIORITY APPLN. INFO.:			FR 2000-13672	A 20001025 <--

OTHER SOURCE(S): MARPAT 136:341140

ED Entered STN: 03 May 2002

AB Methylcyclohexyl (meth)acrylates are prepared in high yield and selectivity by the transesterification of C1-4 alkyl (meth)acrylates with methylcyclohexanols in the transesterification catalysts (the alcoholates of Ti, Sn, Zr, Mg, Ca, Li, Na, K; the hydroxides of Mg, Ca, Li; 1,3-dicarbonyl chelates of Zr, Ca, Mg, Li; etc.) in the presence of a polymerization inhibitor.

IC ICM C07C067-03

ICS C07C069-54; C07C069-013

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 48, 67

IT **Transesterification**

(for the preparation of methylcyclohexyl (meth)acrylates from alkyl (meth)acrylates and methylcyclohexanols in the presence of polymerization inhibitors)

IT 80-62-6, Methyl methacrylate 583-59-5, 2-Methylcyclohexanol

589-91-3, 4-Methylcyclohexanol 591-23-1, 3-Methylcyclohexanol

RL: RCT (Reactant); RACT (Reactant or reagent)

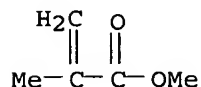
(transesterification process and catalysts for the preparation of

methyleycyclohexyl (meth)acrylates from alkyl (meth)acrylates and methyleycyclohexanols in the presence of polymerization inhibitors)

IT 7732-18-5, Water, processes
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
 (transesterification process and catalysts for the preparation of methyleycyclohexyl (meth)acrylates from alkyl (meth)acrylates and methyleycyclohexanols in the presence of polymerization inhibitors with azeotropic removal of)

IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification process and catalysts for the preparation of methyleycyclohexyl (meth)acrylates from alkyl (meth)acrylates and methyleycyclohexanols in the presence of polymerization inhibitors)

RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 17 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:661368 HCAPLUS

DOCUMENT NUMBER: 135:197225

TITLE: Process for producing ester through transesterification

INVENTOR(S): Yu, Jing; Kai, Hidetomo; Wu, San San; Xiu, Yanxia; Chen, Fenggi

PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan

SOURCE: PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

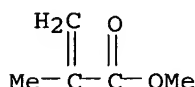
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001064615	A1	20010907	WO 2001-JP1495	20010228 <--
W: AU, CA, CN, ID, KR, SG, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2001316328	A2	20011113	JP 2000-288506	20000922 <--
PRIORITY APPLN. INFO.:			JP 2000-55616	A 20000301 <--

ED Entered STN: 10 Sep 2001

AB The process uses a catalyst comprising one metal compound containing a Group II metal and/or a Group IV metal of the Periodic Table and a phosphine compound in the transesterification of an ester with an alc. A high-purity ester, especially one having two or more ester groups, in particular a high-purity (meth)acrylic ester having two or more (meth)acrylate groups, can be easily produced in a high yield without necessitating a complicated reaction step or using a catalyst having poor handleability. Thus, heating trimethylolpropane 20 with Me acrylate 80 and p-methoxyphenol 0.4 in the presence of Me₂SnCl₂ 1.0 and Ph₃P 0.8

parts at reflux while removing the azeotropic mixture of MeOH and Me acrylate gave a product containing 92.3% triacrylate ester at 92% yield.

- IC ICM C07C067-02
ICS C07C069-54; C07B061-00
- CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 35
- ST polyol transesterification acrylate ester group II metal catalyst; trimethylolpropane methyl acrylate transesterification metal catalyst
- IT 2223-82-7P, Neopentyl glycol diacrylate 2499-95-8P, Hexyl acrylate 3290-92-4P, Trimethylolpropane trimethacrylate 15625-89-5P, Trimethylolpropane triacrylate 48145-04-6P, Ethylene glycol monophenyl ether monoacrylate
RL: IMF (Industrial manufacture); PREP (Preparation)
(catalysts for use in process for producing ester through transesterification)
- IT 77-99-6, Trimethylolpropane 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate 107-21-1, Ethylene glycol, reactions 111-27-3, Hexanol, reactions 122-99-6, Ethylene glycol monophenyl ether 126-30-7, Neopentyl glycol 140-88-5, Ethyl acrylate 141-32-2, Butyl acrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; catalysts for use in process for producing ester through transesterification)
- IT 80-62-6, Methyl methacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; catalysts for use in process for producing ester through transesterification)
- RN 80-62-6 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L66 ANSWER 18 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:152305 HCAPLUS

DOCUMENT NUMBER: 134:193860

TITLE: Transesterification catalysts for preparation of diesters of (meth)acrylic acid

INVENTOR(S): Knebel, Joachim; Carl, Joachim; Graff, Gunther; Wittkowski, Andrea

PATENT ASSIGNEE(S): Rohm GmbH, Germany

SOURCE: Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1078913	A2	20010228	EP 2000-117576	20000816 <--
EP 1078913	A3	20030102		
EP 1078913	B1	20040324		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

DE 19940622	C1	20010517	DE 1999-19940622	19990827 <--
AT 262503	E	20040415	AT 2000-117576	20000816 <--
JP 2001089415	A2	20010403	JP 2000-254163	20000824 <--
US 6639099	B1	20031028	US 2000-644557	20000824 <--

PRIORITY APPLN. INFO.: DE 1999-19940622 A 19990827 <--

OTHER SOURCE(S): MARPAT 134:193860

ED Entered STN: 02 Mar 2001

AB In the title process, giving very pure products economically, C1-4-alkyl (meth)acrylates are transesterified with **diols** (C number ≥ 3) in the presence of Zr chelates with 1,3-dicarbonyl compds. as catalysts. A mixture of 532 g MMA and 67.5 g 1,3-propanediol containing 500 ppm

4-MeOC6H4OH

was dried by **azeotropic** distillation, cooled to 90°, mixed with enough MMA to replace that lost in drying and 6 g Zr acetylacetonate, and heated to distill a MMA-MeOH **azeotrope** to give 140 g mixture of propanediol dimethacrylate 94.2, monomethacrylate 5.2, and **diol** 0.2%.

IC ICM C07C069-54

ICS C07C067-03; C07C067-62

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 45

IT Dicarbonyl compounds

RL: CAT (Catalyst use); USES (Uses)

(1,3-dicarbonyl, zirconium chelates; catalysts for transesterification of alkyl (meth)acrylates with **diols**)

IT Transesterification catalysts

(zirconium chelates with 1,3-dicarbonyl compds.; catalysts for transesterification of alkyl (meth)acrylates with **diols**)

IT 17501-44-9, Zirconium acetylacetonate

RL: CAT (Catalyst use); USES (Uses)

(catalysts for transesterification of alkyl (meth)acrylates with **diols**)

IT 79-10-7DP, Acrylic acid, esters with **diols** 109-16-0P,

Triethylene **glycol** dimethacrylate 1188-09-6P, 1,3-Propanediol dimethacrylate 1189-08-8P, 1,3-Butanediol dimethacrylate 1985-51-9P, Neopentyl **glycol** dimethacrylate 2082-81-7P, 1,4-Butanediol dimethacrylate 25852-47-5P, Polyethylene **glycol** dimethacrylate 86168-85-6P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)

(transesterification catalysts for preparation of diesters of (meth)acrylic acid)

IT 107-88-0, 1,3-Butanediol 110-63-4, 1,4-Butanediol, reactions 112-27-6,

Triethylene **glycol** 126-30-7, Neopentyl **glycol** 504-63-2, 1,3-Propanediol 2163-42-0, 2-Methyl-1,3-propanediol 25322-68-3, Polyethylene **glycol**

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification with Me methacrylate)

IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification with **diols**)

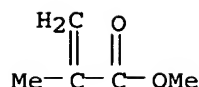
IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification with **diols**)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 / ANSWER 19 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:236982 HCAPLUS

DOCUMENT NUMBER: 130:252789

TITLE: Apparatus and transesterification method for the production of alkylamino (meth)acrylates with byproduct **alcohol azeotropic** distillation

INVENTOR(S): Nagano, Hideaki; Kawashima, Tadayoshi; Kajihara, Tetsuya; Iwasaki, Kaoru; Nakashima, Sumio

PATENT ASSIGNEE(S): Nippon Shokubai Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 24 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 906902	A2	19990407	EP 1998-307939	19980930 <--
EP 906902	A3	19991117		
EP 906902	B1	20020828		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11106369	A2	19990420	JP 1997-268462	19971001 <--
JP 3071406	B2	20000731		
JP 11189575	A2	19990713	JP 1997-359412	19971226 <--
JP 11189576	A2	19990713	JP 1997-359413	19971226 <--
JP 3423205	B2	20030707		
US 6417392	B1	20020709	US 1998-164796	19981001 <--

PRIORITY APPLN. INFO.:

JP 1997-268462	A	19971001 <--
JP 1997-359412	A	19971226 <--
JP 1997-359413	A	19971226 <--

ED Entered STN: 19 Apr 1999

AB Alkylamino (meth)acrylates (e.g., diethylaminoethyl acrylate) are prepared in high yield and selectivity by the transesterification of an alkyl (meth)acrylate (e.g., Me acrylate) with an **alkylaminoalkanol** [e.g., (dimethylamino)ethanol], the **alkanol** (e.g., methanol) by-produced during the transesterification is distilled in the form of an **azeotropic** mixture with the alkyl (meth)acrylate, and the distillate purified with an acidic cation-exchange resin. The reaction solution is also distilled for separation of the transesterification catalyst, and a method and apparatus for conducting the distillation so as to repress the amount of

Michael adduct
to <2% is presented.

IC ICM C07C213-06

ICS B01D003-00; B01J008-02

CC 35-2 (Chemistry of Synthetic High Polymers)

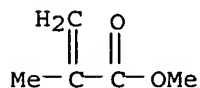
Section cross-reference(s): 23, 48

ST alkylamino methacrylate transesterification prepn; **azeotropic** distn alkylamino acrylate transesterification prepn; Michael addn suppression manuf alkylamino methacrylate

IT Cation exchangers

(acidic; apparatus and transesterification method for the production of

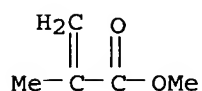
- alkylamino (meth)acrylates with byproduct **alc.**
azeotropic distillation)
- IT **Alcohols, preparation**
RL: BYP (Byproduct); PREP (Preparation)
(aliphatic; apparatus and transesterification method for the production of
alkylamino (meth)acrylates with byproduct **alc.**
azeotropic distillation)
- IT **Alcohols, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(amino, (alkylamino)**alkanols**; apparatus and transesterification
method for the production of alkylamino (meth)acrylates with byproduct
alc. azeotropic distillation)
- IT Distillation apparatus
Transesterification
(apparatus and transesterification method for the production of alkylamino
(meth)acrylates with byproduct **alc. azeotropic**
distillation)
- IT Distillation
(**azeotropic**; apparatus and transesterification method for the
production of alkylamino (meth)acrylates with byproduct **alc.**
azeotropic distillation)
- IT 67-56-1P, Methanol, preparation 71-36-3P, 1-Butanol, preparation
RL: BYP (Byproduct); REM (Removal or disposal); PREP (Preparation); PROC
(Process)
(apparatus and transesterification method for the production of alkylamino
(meth)acrylates with byproduct **alc. azeotropic**
distillation)
- IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate
108-01-0, Dimethylaminoethanol 141-32-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus and **transesterification** method for the production of
alkylamino (meth)acrylates with byproduct **alc.**
azeotropic distillation)
- IT 2439-35-2P, Dimethylaminoethyl acrylate 2867-47-2P, Dimethylaminoethyl
methacrylate
RL: SPN (Synthetic preparation); PREP (Preparation)
(apparatus and transesterification method for the production of alkylamino
(meth)acrylates with byproduct **alc. azeotropic**
distillation)
- IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; apparatus and transesterification method for the production of
alkylamino (meth)acrylates with byproduct **alc.**
azeotropic distillation)
- IT 80-62-6, Methyl methacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(apparatus and **transesterification** method for the production of
alkylamino (meth)acrylates with byproduct **alc.**
azeotropic distillation)
- RN 80-62-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1997:718142 HCAPLUS
 DOCUMENT NUMBER: 128:3463
 TITLE: Preparation of aminoalkyl (meth)acrylates
 INVENTOR(S): Kimura, Masahiro; Murakami, Takao; Mishina, Hiroya
 PATENT ASSIGNEE(S): Toa Gosei Chemical Industry Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09286765	A2	19971104	JP 1996-126454	19960422 <--
PRIORITY APPLN. INFO.:			JP 1996-126454	19960422 <--
OTHER SOURCE(S):	MARPAT 128:3463			
ED	Entered STN:	13 Nov 1997		
AB	Aminoalkyl (meth)acrylates are prepared by transesterification of Me (meth)acrylate with R1R2NR3OH (R1, R2 = hydrocarbyl; R3 = alkylene) in the presence of (A) MeOH-immiscible azeotropic agents which form azeotropes with MeOH and (B) Michael addition products between amino alcs. or MeOH with Me or aminoalkyl (meth)acrylates. Me methacrylate (I) was treated with dimethylaminoethanol, phenothiazine, Mg dimethylaminoethylate, n-hexane, I-aminoalc. adducts, dimethylaminoethyl methacrylate (II)-MeOH adducts, and II-aminoalc. adducts at 49-51° for 4 h with removing MeOH-hexane azeotrope to give 92% II.			
IC	ICM	C07C219-08		
	ICS	C07C213-06; C07B061-00		
CC	23-17 (Aliphatic Compounds)			
	Section cross-reference(s): 35			
ST	aminoalkyl methacrylate prepn methanol hexane azeotrope; methyl acrylate transesterification aminoalc; Michael addn product methylaminoethyl methacrylate prepn			
IT	Alcohols, uses			
	RL:	CAT (Catalyst use); USES (Uses)		
	(amino, Michael addition products with (meth)acrylate esters; preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)			
IT	Azeotropes			
	Transesterification			
	(preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)			
IT	110-54-3, Hexane, uses			
	RL:	NUU (Other use, unclassified); USES (Uses)		
	(azeotropic agent; preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)			
IT	67-56-1D, Methanol, Michael addition products with (meth)acrylate esters, uses 80-62-6D, Methyl methacrylate, Michael addition products with aminoalcs. 2867-47-2D, Dimethylaminoethyl methacrylate, Michael addition products			
	RL:	CAT (Catalyst use); USES (Uses)		
	(preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)			
IT	2867-47-2P, Dimethylaminoethyl methacrylate			
	RL:	IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)		
	(preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)			
IT	80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate			

108-01-0, Dimethylaminoethanol
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)
 IT 67-56-1, Methanol, processes
 RL: REM (Removal or disposal); PROC (Process)
 (removal of, as azeotropes; preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of aminoalkyl (meth)acrylates in presence of azeotropes and Michael addition products)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 21 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1996:657068 HCAPLUS
 DOCUMENT NUMBER: 125:329704
 TITLE: Lower-temperature transesterification reaction of alkoxyated bisphenol A and methyl methacrylate
 INVENTOR(S): Pugach, Joseph; Salek, Jeffrey S.; Aiken, John E.
 PATENT ASSIGNEE(S): Aristech Chemical Corporation, USA
 SOURCE: U.S., 5 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5567838	A	19961022	US 1995-459863	19950602 <--
CA 2202546	AA	19961205	CA 1996-2202546	19960517 <--
CA 2202546	C	20000208		
WO 9638403	A1	19961205	WO 1996-US7383	19960517 <--
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 783481	A1	19970716	EP 1996-916534	19960517 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
PRIORITY APPLN. INFO.:			US 1995-459863	A 19950602 <--
			WO 1996-US7383	W 19960517 <--

ED Entered STN: 07 Nov 1996

AB The transesterification reaction proceeds at lower temps., preferably 75-80°, in the presence of potassium hydroxide or alkoxide catalysts, and, optionally, polymerization inhibitors, and is driven by the removal of methanol as a methanol/saturated hydrocarbon azeotrope. The lower temperature reaction inhibits polymerization of the feed ester.

Thus, a

mixture of 6-ethoxylated bisphenol A 246, Me methacrylate 162, 4-methoxyphenol 0.27, phenothiazine 0.27, potassium methoxide 0.15, and hexane 21.5 g was heated to a moderate boil at atmospheric pressure to

equilibrate the Oldershaw distillation column, then the temperature of the reaction

mixture was maintained at 80° by addition of hexane with 3 cooling-catalyst addition steps to give 98% conversion in 1.5 h with no polymer formation, compared with 92% in 2.3 h with polymer formation when no hexane was used.

IC ICM C07C069-76

INCL 560060000

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 25, 45

ST transesterification alkoxyated **bisphenol A** methyl methacrylate; hexane methanol **azeotropic** removal transesterification; potassium methoxide transesterification catalyst

IT Hydrocarbons, uses

RL: NUU (Other use, unclassified); USES (Uses)

(**azeotropic** solvent; in lower-temperature transesterification reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT Transesterification catalysts

(in lower-temperature transesterification reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT **Transesterification**

(lower-temperature transesterification reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT 67-56-1, Methanol, processes

RL: REM (Removal or disposal); PROC (Process)

(**azeotropic** removal of; in lower-temperature transesterification reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT 110-54-3, Hexane, uses 142-82-5, Heptane, uses

RL: NUU (Other use, unclassified); USES (Uses)

(**azeotropic** solvent; in lower-temperature transesterification reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT 865-33-8, Potassium methoxide 917-58-8, Potassium ethoxide 1310-58-3, Potassium hydroxide, uses 3999-70-0, Potassium butoxide

RL: CAT (Catalyst use); USES (Uses)

(catalyst; in lower-temperature transesterification reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT 80-62-6 32492-61-8, Ethoxyated **bisphenol A**

RL: RCT (Reactant); RACT (Reactant or reagent)

(lower-temperature **transesterification** reaction of alkoxyated **bisphenol A** and Me methacrylate)

IT 92-84-2, Phenothiazine 150-76-5

RL: NUU (Other use, unclassified); USES (Uses)

(polymerization inhibitor; in lower-temperature transesterification

reaction of

alkoxyated **bisphenol A** and Me methacrylate)

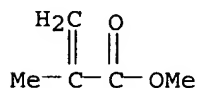
IT 80-62-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(lower-temperature **transesterification** reaction of alkoxyated **bisphenol A** and Me methacrylate)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1995:938673 HCAPLUS
 DOCUMENT NUMBER: 124:30605
 TITLE: Preparation of tetrahydrobenzyl (meth)acrylate
 INVENTOR(S): Fujiwara, Keisuke; Takemoto, Etsuo
 PATENT ASSIGNEE(S): Daicel Chem, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

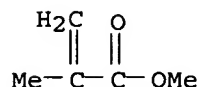
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07238058	A2	19950912	JP 1994-29618	19940228 <--
PRIORITY APPLN. INFO.:			JP 1994-29618	19940228 <--

ED Entered STN: 23 Nov 1995
 AB The title compds. are prepared by transesterification of Me (meth)acrylate with tetrahydrobenzyl alc. (I) in the presence of **azeotropic** agents, which form **azeotropes** with MeOH at **azeotropic** points such that $T_1 < T_2$ [T_1 = **azeotropic** point of the agents and MeOH; T_2 = **azeotropic** point of MeOH and (meth)acrylates]. A mixture of I, $\text{CH}_2:\text{CMeCO}_2\text{Me}$, dibutyltin oxide, and 3,5-di-tert-butyl-4-hydroxytoluene in hexane was treated at 80° for 6 h to give 96.4% tetrahydrobenzyl methacrylate.
 IC ICM C07C069-54
 CCS B01D003-36; C07B063-00; C07C067-02; C07C067-54
 CC 35-2 (Chemistry of Synthetic High Polymers)
 ST hydrobenzyl methacrylate prepn; acrylate tetrahydrobenzyl prepn; transesterification methacrylate hexane **azeotropic** agent; cyclohexane **azeotropic** agent acrylate transesterification
 IT **Transesterification**
 (preparation of tetrahydrobenzyl (meth)acrylate by transesterification of Me (meth)acrylate using (cyclo)hexane **azeotropic** agents)
 IT 110-54-3, n-Hexane, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (in preparation of tetrahydrobenzyl (meth)acrylate by transesterification of Me (meth)acrylate using (cyclo)hexane **azeotropic** agents)
 IT 147768-63-6P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of tetrahydrobenzyl (meth)acrylate by transesterification of Me (meth)acrylate using (cyclo)hexane **azeotropic** agents)
 IT 138594-67-9P
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
 (Preparation)
 (preparation of tetrahydrobenzyl (meth)acrylate by transesterification of Me (meth)acrylate using (cyclo)hexane **azeotropic** agents)
 IT 110-82-7, Cyclohexane, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (preparation of tetrahydrobenzyl (meth)acrylate by transesterification of Me (meth)acrylate using (cyclo)hexane **azeotropic** agents)
 IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate 112170-65-7, Cyclohexanemethanol
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of tetrahydrobenzyl (meth)acrylate by transesterification of Me (meth)acrylate using (cyclo)hexane **azeotropic** agents)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of tetrahydrobenzyl (meth)acrylate by

transesterification of Me (meth)acrylate using (cyclo)hexane
azeotropic agents)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 23 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:213727 HCAPLUS

DOCUMENT NUMBER: 118:213727

TITLE: Transesterification catalyst

INVENTOR(S): Venter, Jeremia J.; Mcdade, Christine

PATENT ASSIGNEE(S): Rohm and Haas Co., USA

SOURCE: U.S., 5 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5183930	A	19930202	US 1992-899791	19920617 <--
CA 2081526	AA	19931218	CA 1992-2081526	19921027 <--
EP 574632	A1	19931222	EP 1992-309872	19921028 <--
EP 574632	B1	19960103		
R: BE, CH, DE, ES, FR, GB, IT, LI, NL				
ES 2083106	T3	19960401	ES 1992-309872	19921028 <--
JP 06009495	A2	19940118	JP 1992-312323	19921120 <--
PRIORITY APPLN. INFO.:			US 1992-899791	A 19920617 <--

ED Entered STN: 29 May 1993

AB A process for the batch preparation of carboxylate esters by ester interchange is claimed. In this process a supported transition metal transesterification catalyst is prepared by preforming an oligomer from water and a transition metal alkoxide and mixing this oligomer with a solid substrate having at its surface a plurality of OH groups. A process wherein the ester is acrylate or methacrylate is claimed. A mixture of tetrabutyltitanium in butanol was added to a mixture of butanol and water to give a titanium oligomer (solid); this oligomer in cyclohexane was added to CS-1022 silica gel and dried to give a catalyst. An 8% oxygen/nitrogen mixture was fed into a reactor containing Me methacrylate, lauryl alc., and the above titanium oligomer catalyst and methanol was removed by azeotropic distillation. Using a clay-supported titanium oligomer catalyst conversion to lauryl methacrylate was 6.8%. Using a clay-supported titanium oligomer catalyst conversion to lauryl methacrylate was 6.8%.

IC ICM C07C067-02

INCL 560217000

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23

IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

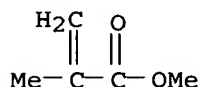
(transesterification of, silica-supported titanium oligomer
catalyst for)

IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, silica-supported titanium oligomer
catalyst for)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 24 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:354435 HCAPLUS

DOCUMENT NUMBER: 122:106758

TITLE: Manufacture of allyl methacrylate from methyl
methacrylate by transesterification

INVENTOR(S): Urbaniak, Wlodzimierz; Radocki, Dariusz; Krzyzanowski,
Piotr; Marciniak, Bogdan

PATENT ASSIGNEE(S): Uniwersytet im. Adama Mickiewicza, Pol.

SOURCE: Pol., 3 pp.

CODEN: POXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Polish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 162537	B1	19931231	PL 1990-285440	19900530 <--
PRIORITY APPLN. INFO.:			PL 1990-285440	19900530 <--

ED Entered STN: 15 Feb 1995

AB Allyl methacrylate (I) is produced by transesterification of Me
methacrylate (II) with allyl alc. in the presence of 0.1-10%
allyl titanate catalyst and 0.01-1% polymerization inhibitor. The catalyst is
obtained from TiCl₄ and an excess of allyl alc. Thus, 0.1 mol
TiCl₄ was added in portions to 0.51 mol ice/H₂O-cooled anhydrous allyl
alc. When effervescence of HCl(g) ceased the reaction mixture was
heated for 1 h at 343°K, then made alkaline by introducing NH₃(g) and
small amount of petroleum ether (for better stirring), precipitated NH₄Cl was
removed after 24 h, the filtrate was concentrated to remove solvent and excess
allyl alc., and NH₄Cl precipitate was removed to give allyl titanate
catalyst as a clear, yellowish oil. A mixture of II 800, allyl alc
. 400, and the above catalyst 20 cm³ was heated for 4 h at 353°K in
the presence of 1 g hydroquinone with removal of MeOH-II azeotrope
and the residue distilled in vacuo to give I as fraction b.
332-335°/57.2 hPa, with .apprx.98% conversion of allyl alc

IC ICM C07C069-54

ICS B01J021-06

CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 67

ST allyl methacrylate; titanate allyl transesterification catalyst prepn;
transesterification methyl methacrylate allyl titanate catalyst;
methacrylate methyl transesterification allyl alc

IT 107-18-6DP, Allyl alcohol, titanates 7550-45-0DP, Titanium
tetrachloride, salts with allyl alc.

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

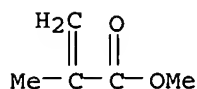
(transesterification catalysts; manufacture of allyl methacrylate from Me methacrylate by transesterification)

IT 107-18-6, Allyl alcohol, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification with Me methacrylate; manufacture of allyl methacrylate from Me methacrylate by transesterification)

IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification with allyl alc.; manufacture of allyl methacrylate from Me methacrylate by transesterification)

IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification with allyl alc.; manufacture of allyl methacrylate from Me methacrylate by transesterification)

RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 25 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1993:604079 HCAPLUS
 DOCUMENT NUMBER: 119:204079
 TITLE: Preparation of acrylic acid and methacrylic acid esters
 INVENTOR(S): Kearns, Mark Alan
 PATENT ASSIGNEE(S): BP Chemicals Ltd., UK
 SOURCE: Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

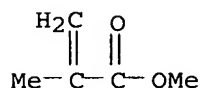
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 534666	A2	19930331	EP 1992-308426	19920916 <--
EP 534666	A3	19941019		
EP 534666	B1	19960522		
R: BE, DE, ES, FR, GB, IT, NL				
ES 2087455	T3	19960716	ES 1992-308426	19920916 <--
US 5362904	A	19941108	US 1992-950344	19920924 <--
PRIORITY APPLN. INFO.:			GB 1991-20584	A 19910927 <--

OTHER SOURCE(S): MARPAT 119:204079

ED Entered STN: 13 Nov 1993

AB The preparation of esters of a C₂ alc. (I) containing ≥2 O functions comprises transesterification of a (meth)acrylate of a C₁-4 alc. (containing only 1 O function) with I in the presence of a catalyst comprising (a) a (hydr)oxide or nitrate of Ca or Ba; and (b) a compound LiX (X = NO₃, sulfite, and C₂-6 carboxylate; both (a) and (b) are not nitrates in the same catalyst. Thus, Me methacrylate (II) was transesterified with trimethylolpropane at 95-110°C with distillation of MeOH-II azeotrope in presence of LiNO₃ and CaO; II was recycled. A 95% yield of trimethylolpropane trimethacrylate was obtained.

IC ICM C07C067-03
ICS C07C069-54
CC 35-2 (Chemistry of Synthetic High Polymers)
IT 553-54-8, Lithium benzoate 1304-28-5, Barium oxide, uses 1305-62-0,
Calcium hydroxide, uses 1305-78-8, Calcium oxide, uses 4485-12-5,
Lithium stearate 7790-69-4, Lithium nitrate 16577-52-9, Lithium
octanoate
RL: CAT (Catalyst use); USES (Uses)
(catalysts containing, for transesterification of Me methacrylate with
polyols)
IT 97-90-5P, Ethylene glycol dimethacrylate 1189-08-8P,
1,3-Butylene glycol dimethacrylate 2455-24-5P 3290-92-4P,
Trimethylolpropane trimethacrylate
RL: PREP (Preparation)
(preparation of, by transesterification of Me methacrylate)
IT 150-76-5, p-Methoxyphenol
RL: USES (Uses)
(stabilizer, in transesterification of Me methacrylate with
polyols)
IT 77-99-6, Trimethylolpropane 97-99-4, Tetrahydrofurfuryl alcohol
107-21-1, Ethylene glycol, reactions 107-88-0, 1,3-Butylene
glycol
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification by, of Me methacrylate)
IT 80-62-6, Methyl methacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with trimethylolpropane)
IT 80-62-6, Methyl methacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with trimethylolpropane)
RN 80-62-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 26 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:551596 HCAPLUS
DOCUMENT NUMBER: 117:151596
TITLE: Simultaneous preparation of hydroxyethyl methacrylate
and ethylene glycol dimethacrylate
INVENTOR(S): Beranek, Jan
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 7 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 273215	B1	19910312	CS 1988-529	19880128 <--
PRIORITY APPLN. INFO.:			CS 1988-529	19880128 <--
ED Entered STN: 17 Oct 1992				
AB Title compds. I and II, resp., are prepared by transesterification of Me				

methacrylate (III) with ethylene glycol (IV) in presence of a basic catalyst, polymerization inhibitor, and a hydrocarbon solvent for removal of MeOH by azeotropic distillation III/IV molar ratio is (1-2):(1-2).

The reaction product is diluted with H₂O, and II is separated by extn with hydrocarbon, and then evaporation; I is separated by extraction of aqueous

raffinate with

ether or chlorinated hydrocarbon b. 30-100°, and then evaporation. Thus, transesterification of reactants in cyclohexane was done with MeONa and azeotropic removal of MeOH; conversion was >95%; II/I ratio was 1.3:1; II and I were extracted by cyclohexane and CH₂Cl₂, resp.

IC ICM C07C069-54

CC 35-2 (Chemistry of Synthetic High Polymers)

ST methacrylate ester prepn; hydroxyethyl methacrylate prepn; ethylene glycol dimethacrylate prepn

IT Transesterification

(of ethylene glycol and Me methacrylate)

IT 868-77-9P

RL: PREP (Preparation)

(preparation of ethylene glycol dimethacrylate and, simultaneous, by transesterification)

IT 97-90-5P, Ethylene glycol dimethacrylate

RL: PREP (Preparation)

(preparation of hydroxyethyl methacrylate and, simultaneous, by transesterification)

IT 107-21-1, Ethylene glycol, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with Me methacrylate)

IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with ethylene glycol)

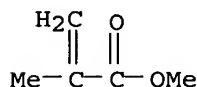
IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with ethylene glycol)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 27 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:584134 HCAPLUS

DOCUMENT NUMBER: 115:184134

TITLE: Preparing haloalkyl methacrylate monomers

INVENTOR(S): Lewis, Norman John; Wells, Andrew S.

PATENT ASSIGNEE(S): Smith Kline and French Laboratories Ltd., UK

SOURCE: PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9109005	A1	19910627	WO 1990-GB1922	19901210 <--
W: AU, CA, JP, KR				

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE
 CA 2073007 AA 19910612 CA 1990-2073007 19901210 <--
 AU 9168939 A1 19910718 AU 1991-68939 19901210 <--
 AU 633171 B2 19930121
 ZA 9009888 A 19920729 ZA 1990-9888 19901210 <--
 EP 505406 A1 19920930 EP 1991-900279 19901210 <--
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE
 JP 05502666 T2 19930513 JP 1991-500991 19901210 <--
 US 5441731 A 19950815 US 1992-837793 19920218 <--
 PRIORITY APPLN. INFO.: US 1989-449013 A 19891211 <--
 GB 1988-29088 A 19881213 <--
 WO 1990-GB1922 A 19901210 <--

OTHER SOURCE(S): MARPAT 115:184134

ED Entered STN: 01 Nov 1991

AB A title monomer, useful in preparing polymers for lowering serum cholesterol, H₂C:CRCO₂(CH₂)_nX (R = C1-4 alkyl; n = 1-20; X = halogen) is prepared by transesterification of a C1-4-alkyl methacrylate with **haloalkanol** HO(CH₂)_nX in the presence of a Ti tetrakis(C1-4-alkoxide) or a dialkyltin oxide catalyst, and a stabilizer. Thus, Me methacrylate (I) (stabilized with BHT), 11-bromoundecanol, and Ti(OPr-iso)₄ were mixed. Bubbling in dry air, refluxing gently for 1 h, removing by distillation the I/MeOH **azeotrope**, cooling to 40°, quenching with H₂O, stirring, treating with celite, washing, and distilling in vacuo (4-10 mm) at room temperature

and then at 50-60° gave 11-bromoundecyl methacrylate.

IC ICM C07C069-653

ICS C07C067-03

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 63

IT Antioxidants

Heat stabilizers

(Me methacrylate transesterification by **haloalkanol** in presence of, process and catalyst for)

IT Transesterification catalysts

(dialkyltin oxide or titanium tetraalkoxide, for Me methacrylate with **haloalkanols**)

IT 128-37-0, 2,6-Di-tert-butyl-4-methylphenol, uses and miscellaneous 1948-33-0 25013-16-5, BHA

RL: USES (Uses)

(Me methacrylate transesterification by **haloalkanol** in presence of, process and catalyst for)

IT 546-68-9, Titanium tetraisopropoxide

RL: CAT (Catalyst use); USES (Uses)

(catalyst, for transesterification of Me methacrylate with **haloalkanols**)

IT 818-08-6, Dibutyltin oxide

RL: CAT (Catalyst use); USES (Uses)

(catalyst, in transesterification of Me methacrylate with **haloalkanols**)

IT 80-62-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with **haloalkanols**)

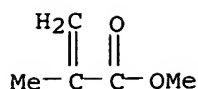
IT 80-62-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with **haloalkanols**)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 /ANSWER 28 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1991:607533 HCAPLUS
 DOCUMENT NUMBER: 115:207533
 TITLE: Hafnium-catalyzed transesterification
 INVENTOR(S): Mirabelli, Mario G. L.
 PATENT ASSIGNEE(S): Rohm and Haas Co., USA
 SOURCE: U.S., 5 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5037978	A	19910806	US 1990-492528	19900312 <--
CA 2037163	AA	19910913	CA 1991-2037163	19910227 <--
EP 447141	A2	19910918	EP 1991-301973	19910308 <--
EP 447141	A3	19920415		
EP 447141	B1	19951206		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 131150	E	19951215	AT 1991-301973	19910308 <--
ES 2082131	T3	19960316	ES 1991-301973	19910308 <--
JP 04217641	A2	19920807	JP 1991-45048	19910311 <--
JP 2992965	B2	19991220		

PRIORITY APPLN. INFO.: /US 1990-492528 A 19900312 <--
 OTHER SOURCE(S): CASREACT 115:207533; MARPAT 115:207533

ED Entered STN: 15 Nov 1991

AB Carboxylic acid lower alkyl esters CH₂:CRCO₂R₁ (R = H, Me; R₁ = alkyl) underwent transesterification with **alcs.** R₂OH (R₂ = alkyl, cycloalkyl, etc., where R₂ has a carbon content higher than R₁) in the presence of a Hf(IV) chelate. Thus, a mixture of 3.0 mol isodecyl **alc.**, 7.5 mol Me methacrylate (I), 7.75 g Hf acetylacetonate, 50 g diethylhydroxylamine, and 25 g phenothiazine free radical polymerization inhibitors were heated at reflux for 90 min, with **azeotropic** distillation of I and MeOH, to give 99% isodecyl methacrylate.

IC ICM C07D265-30
 ICS C07D295-18; C07D211-30; C07C067-03

INCL 544171000

CC 23-17 (Aliphatic Compounds)

IT 97-88-1P, Butyl methacrylate 136-60-7P, Butyl benzoate 141-32-2P,
 Butyl acrylate 2495-27-4P, Cetyl methacrylate 29964-84-9P, Isodecyl
 methacrylate 50977-30-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, by transesterification of Me methacrylate with **alcs**
 .. hafnium acetylacetonat-catalyzed)

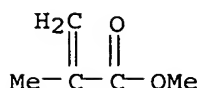
IT 25339-17-7, Isodecyl **alcohol** 36653-82-4, Cetyl **alcohol**

RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with Me methacrylate, hafnium acetylacetonate
 catalyzed)

IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate 97-63-2,
 Ethyl methacrylate 140-88-5, Ethyl acrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with higher alcs., hafnium acetylacetonate catalyzed)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with higher alcs., hafnium acetylacetonate catalyzed)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 29 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:77889 HCAPLUS
 DOCUMENT NUMBER: 120:77889
 TITLE: Manufacture of 2-ethylhexyl methacrylate by transesterification
 INVENTOR(S): Mihai, Cornelia; Popescu, Petru; Serban, Sever
 PATENT ASSIGNEE(S): Intreprinderea Chimica, Falticeni, Rom.
 SOURCE: Rom., 3 pp.
 CODEN: RUXXA3
 DOCUMENT TYPE: Patent
 LANGUAGE: Romanian
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

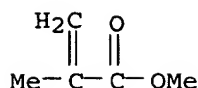
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 101750	B1	19911209	RO 1988-134506	19880714 <--
			RO 1988-134506	19880714 <--

PRIORITY APPLN. INFO.:
 ED Entered STN: 19 Feb 1994

AB A Me methacrylate (I)-H₂SO₄ mixture is continuously added to a 2-ethylhexyl alc. (II)-hydroquinone (III, 0.2-0.5% based on total reaction mixture) mixture at 60-120° or 1/3 of the I-H₂SO₄ mixture is added to the II-III mixt cold and the remaining 2/3 is added at the reaction temperature, with the pressure maintained at 350-450 mm. The H₂SO₄ (2-5%, based on I) is distributed at 50-72% in the reactor and 28-50% in the addition vessel. This process gave crude product with higher title ester concentration than a process where a I-II mixture containing excess I is added to the reactor simultaneously with removal of MeOH by azeotropic distillation

IC ICM C07C069-54
 CC 35-2 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 23

IT **Transesterification**
 (of Me methacrylate with ethylhexanol)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with ethylhexanol)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with ethylhexanol)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 30 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:536974 HCAPLUS

DOCUMENT NUMBER: 115:136974

TITLE: Preparation of dialkylaminoalkyl (meth)acrylate monomers

INVENTOR(S): Kobayashi, Yukya; Asano, Michio; Takaramoto, Kyotaka; Shibata, Yukio

PATENT ASSIGNEE(S): Sanyo Chemical Industries Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03118352	A2	19910520	JP 1989-256222	19890929 <--
PRIORITY APPLN. INFO.:			JP 1989-256222	19890929 <--

ED Entered STN: 05 Oct 1991

AB Monomers CH₂:CR₁CO₂R₅NR₃R₄ (R₁ = H, Me; R₃₋₄ = C₁₋₄ alkyl; R₅ = C₂₋₄ alkylene) are prepared by transesterification of CH₂:CR₁CO₂R₂ (R₂ = C₁₋₄ alkyl) with R₃R₄NR₅OH under pressure and in the presence of inert saturated hydrocarbons. Thus, a mixture of Me acrylate 293, dimethylaminoethanol 178, n-hexane 138, Bu₂Sn oxide 3.0, and phenothiazine 3.4 g was treated at 0.8-1.5 atm and 100° under removal of MeOH-n-hexane azeotropic mixture for 13 h and then vacuum distilled to give 217 g dimethylaminoethyl acrylate.

IC ICM C07C219-08
ICS C07C213-06

CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 23

ST alkylaminoalkyl acrylate prepn; methacrylate dialkylaminoalkyl prepn; transesterification **dialkylaminoalkanol** acrylate ester

IT Hydrocarbons, uses and miscellaneous
RL: USES (Uses)
(in transesterification of (meth)acrylate esters with **dialkylaminoalkanols**)

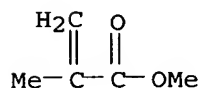
IT **Transesterification**
(of (meth)acrylate esters with **dialkylaminoalkanols**, saturated hydrocarbons in)

IT 110-54-3, n-Hexane, uses and miscellaneous
RL: USES (Uses)
(in transesterification of (meth)acrylate esters with **dialkylaminoalkanols**)

IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with **dialkylaminoalkanols**, saturated hydrocarbons in)

IT 80-62-6, Methyl methacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with **dialkylaminoalkanols**, saturated hydrocarbons in)

RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 31 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:140007 HCAPLUS
 DOCUMENT NUMBER: 112:140007
 TITLE: Transesterification manufacture of higher alkyl
 acrylates and methacrylates
 INVENTOR(S): Beranek, Jan
 PATENT ASSIGNEE(S): Czech.
 SOURCE: Czech., 11 pp.
 CODEN: CZXXA9
 DOCUMENT TYPE: Patent
 LANGUAGE: Czech
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 259978	B1	19881115	CS 1987-1129	19870220 <--
PRIORITY APPLN. INFO.:			CS 1987-1129	19870220 <--

ED Entered STN: 13 Apr 1990

AB The conventional preparation of the title compds. by the reaction of CH₂:CRCO₂R₁ (R = H, Me, R₁ = Me, Et) and C_{≥3} alcs. is improved by predrying of the reactants to prevent decomposition of the (MeO)₂Mg catalyst. Treating the reaction mixture with an abrasive sorbent prevents fouling of the manufacturing equipment. Thus, a stainless steel reactor with a packed column was charged with 9.5 kg dry BuOH, 13.5 kg CH₂:CMeCO₂Me, 2.3 kg dry cyclohexane, 100 g di-tert-butyl-p-methylphenol, and 17.5 kg recycled cyclohexane which was sep. dehydrated to <0.05% water content. The mixts. was azeotropically dried, treated at 70° with a solution of 60.5 g Mg in 2.6 L MeOH, and 0.2% active C was added (based on the batch weight). The mixture was boiled at a reflux ratio of 10:1 with separation

of the binary MeOH-cyclohexane mixture and feeding 40 L/h air until the head temperature reached 77.5° (225 min). This arrangement enabled 10 consecutive transesterification runs to be conducted while maintaining a satisfactory degree of conversion without a drop in the distillation speed.

The lining of the heat exchanger surfaces was entirely free of deposits.

IC ICM C07C069-54

CC 35-2 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 23, 48

IT **Transesterification**

(manufacture of higher alkyl acrylates and methacrylates by, reagent drying before)

IT 80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate 97-63-2,
 Ethyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of higher alkyl acrylates and methacrylates by, reagent drying before)

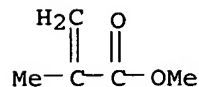
IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(manufacture of higher alkyl acrylates and methacrylates by, reagent drying before)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 32 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:458487 HCAPLUS

DOCUMENT NUMBER: 111:58487

TITLE: Method for production of methacrylate ester

INVENTOR(S): Kobayashi, Akihiro; Fujita, Toshiyuki; Saito, Takayuki; Akima, Toshio

PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 292215	A2	19881123	EP 1988-304391	19880516 <--
EP 292215	A3	19900822		
EP 292215	B1	19931027		
EP 292215	B2	19971008		
R: BE, DE, FR, GB, IT, NL				
JP 63287748	A2	19881124	JP 1987-121548	19870519 <--
JP 07013038	B4	19950215		
JP 01113345	A2	19890502	JP 1987-268948	19871023 <--
JP 07017577	B4	19950301		
US 4916255	A	19900410	US 1988-194347	19880516 <--

PRIORITY APPLN. INFO.:

JP 1987-121548 A 19870519 <--
JP 1987-268948 A 19871023 <--

ED Entered STN: 20 Aug 1989

AB Methacrylate esters are prepared, without discoloration or polymerization, by transesterification of Me methacrylate (I) with alcs. having ether linkages and(or) containing alicyclic rings in the presence of alkaline substances. A dispersion containing 206 g polyethylene glycol monodicyclopentenyl ether and 1 g LiOH was refluxed 4 h with 200 g I and 0.12 g hydroquinone monomethyl ether while removing a I-MeOH-water azeotrope by distillation and with addition of 0.5 g addnl. LiOH at 0.5 and 1 h after the beginning of the distillation giving 230 g polyethylene glycol monodicyclopentenyl ether methacrylate with no polymer formation.

IC ICM C07C069-54

ICS C07C067-03

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 23, 24

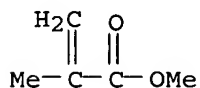
ST methacrylate monodicyclopentenyl polyoxyethylene prepn;

transesterification methacrylate alicyclic alc

IT Transesterification

(of Me methacrylate with ether alcs. or alicyclic alcs. in presence of alkaline compds.)

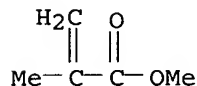
- IT **Alcohols**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(alicyclic, transesterification of, with Me methacrylate)
- IT **Alcohols**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkoxy, transesterification of, with Me methacrylate)
- IT **Alcohols**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(ether, transesterification of, with Me methacrylate)
- IT 109-17-1P 3232-07-3P, Bicyclo[2.2.1]hept-2-en-5-ol methacrylate
31621-69-9P 34759-34-7P, Tricyclo[5.2.1.0^{2,6}]decan-8-ol methacrylate
41637-38-1P 64998-38-5P, Ethylene glycol monodicyclopentenyl
ether methacrylate 70378-12-0P, Propylene glycol
monodicyclopentenyl ether methacrylate 121826-50-4P 121830-79-3P
RL: PREP (Preparation)
(preparation of, by transesterification of Me methacrylate and alc
.)
- IT 124-41-4, Sodium methoxide 1310-65-2, Lithium hydroxide 1310-73-2,
Sodium hydroxide, uses and miscellaneous 7580-67-8, Lithium hydride
(LiH)
RL: USES (Uses)
(transesterification of Me methacrylate with alcs. in
presence of)
- IT 112-60-7, Tetraethylene glycol 13080-90-5,
Bicyclo[2.2.1]hept-5-en-2-ol 13380-89-7, Tricyclo[5.2.1.0^{2,6}]decan-8-ol
27137-33-3 27274-31-3 32492-61-8 64998-38-5, Ethylene glycol
monodicyclopentenyl ether 69851-20-3, Propylene glycol
monodicyclopentenyl ether 88032-60-4 121830-78-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with Me methacrylate)
- IT 80-62-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with ether alcs. or
alicyclic alcs.)
- IT 80-62-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with ether alcs. or
alicyclic alcs.)
- RN 80-62-6 HCAPLUS
- CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 33 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:151142 HCAPLUS
DOCUMENT NUMBER: 108:151142
TITLE: Preparation of alkylaminoalkyl (meth)acrylates by
using alkali metal bicarbonates as catalysts
INVENTOR(S): Itoi, Akira; Yamauchi, Atsuro; Muranaka, Hidekazu
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 62242652	A2	19871023	JP 1986-86059	19860416 <--
PRIORITY APPLN. INFO.:				JP 1986-86059	19860416 <--
ED	Entered STN: 30 Apr 1988				
AB	Title (meth)acrylates are prepared by transesterification between Me (meth)acrylate and R1R2N(CH2)nOH (R1 = H, C2-6 alkyl; R2 = C1-6 alkyl; n = 2-6) in the presence of KHCO3, CsHCO3, or RbHCO3 as a catalyst. Thus, tert-BuNH(CH2)2OH 234, Me methacrylate (I) 500, KHCO3 2.0, and phenothiazine 2.0 g were heated for 5 h while removing MeOH-I azeotropic mixture at 40-45° and 300 mmHg to give 305 g tert-butylaminoethyl methacrylate which was recovered by distillation				
IC	ICM C07C093-193 ICS B01J027-232; C07C089-00				
CC	35-3 (Chemistry of Synthetic High Polymers)				
IT	298-14-6, Potassium bicarbonate 15519-28-5, Cesium bicarbonate 19088-74-5, Rubidium bicarbonate				
	RL: CAT (Catalyst use); USES (Uses) (catalyst, for transesterification of alkylaminoalkanol with Me (meth)acrylate with high purity)				
IT	80-62-6, Methyl methacrylate 96-33-3, Methyl acrylate RL: RCT (Reactant); RACT (Reactant or reagent) (transesterification of, with alkylaminoalkanols, catalysts for, bicarbonates as)				
IT	80-62-6, Methyl methacrylate RL: RCT (Reactant); RACT (Reactant or reagent) (transesterification of, with alkylaminoalkanols, catalysts for, bicarbonates as)				
RN	80-62-6 HCAPLUS				
CN	2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)				



L66 /ANSWER 34 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1987:599072 HCAPLUS
 DOCUMENT NUMBER: 107:199072
 TITLE: Preparation of methacrylic esters by transesterification
 INVENTOR(S): Gabillet, Philippe
 PATENT ASSIGNEE(S): Societe Francaise d'Organo Synthese, Fr.
 SOURCE: Fr. Demande, 8 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2584711	A1	19870116	FR 1985-10674	19850711 <--
FR 2584711	B1	19871030		
EP 210907	A1	19870204	EP 1986-401520	19860709 <--
EP 210907	B1	19890913		

R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE

AT 46317	E	19890915	AT 1986-401520	19860709 <--
BR 8603245	A	19870224	BR 1986-3245	19860710 <--
ES 2000211	A6	19880116	ES 1986-230	19860710 <--
CA 1250591	A1	19890228	CA 1986-513517	19860710 <--
IN 167812	A	19901222	IN 1986-MA529	19860710 <--
US 4791221	A	19881213	US 1986-884631	19860711 <--
PRIORITY APPLN. INFO.:			FR 1985-10674	A 19850711 <--
			EP 1986-401520	A 19860709 <--

ED Entered STN: 27 Nov 1987

AB Me methacrylate (I) is transesterified with higher **alcs.** using 6-30 ppm (as Li) LiOH or Li₂CO₃ catalysts in the presence of solvents **azeotroping** with MeOH giving **azeotropes b.** <.apprx.60°. A mixture of stearyl **alc.** 1573 g, hexane 600 mL, N,N'-dinaphthyl-p-phenylenediamine 1 g, and a 2.4.% LiOH solution in MeOH 5.36 mL, was mixed with I 690.4 g over 45 min at 115-120°, giving 98% conversion to stearyl methacrylate.

IC ICM C07C069-54

ICS C07C067-03

CC 35-2 (Chemistry of Synthetic High Polymers)

ST methyl methacrylate transesterification higher **alc**; lithium hydroxide catalyst transesterification

IT Transesterification catalysts

(lithium hydroxide or lithium carbonate, for Me methacrylate with higher **alcs.**)

IT 554-13-2, Lithium carbonate 1310-65-2, Lithium hydroxide

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for transesterification of Me methacrylate with higher **alcs.**)IT 112-53-8, Lauric **alcohol** 112-92-5, Stearyl **alcohol** 25339-17-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with Me methacrylate)

IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with higher **alcs.**, catalysts for)

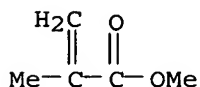
IT 80-62-6, Methyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, with higher **alcs.**, catalysts for)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 35 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:95096 HCAPLUS

DOCUMENT NUMBER: 108:95096

TITLE: Process for the production of acrylate and methacrylate esters

INVENTOR(S): Merger, Franz; Hutmacher, Hans Martin; Schwarz, Wolfgang; Nestler, Gerhard; Szucsanyi, Maria Gyopar; Mueller-Mall, Rudolf

PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.

SOURCE: Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 236994	A1	19870916	EP 1987-103284	19870307 <--
EP 236994	B1	19891220		
R: BE, DE, FR, GB, IT, NL				
US 4777265	A	19881011	US 1987-22110	19870305 <--
JP 62223175	A2	19871001	JP 1987-52244	19870309 <--
JP 07049421	B4	19950531		

PRIORITY APPLN INFO.: (DE 1986-3607995 A 19860311 <--

ED Entered STN: 19 Mar 1988

AB The esters I (R = H, Me; X, Z = C2-5 alkylene) are prepared easily and selectively from alkyl (meth)acrylates and the required heterocyclic alcs. in the presence of chelates of Ti, Zr, Fe, or Zn with 1,3-dicarbonyl compds. or titanate esters. Blowing 0.9 L air/h through a refluxing mixture of Me methacrylate (II) 2700, 1-(2-hydroxyethyl)-2-imidazolidinone (III) 780, Ti(OEt)₄ 13, and phenothiazine 2.7 g with distillation of II-MeOH azeotrope gave a 91% yield of III methacrylate ester.

IC ICM C07D233-04

ICS C07D239-06; C07D243-04; C07D245-02

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 28, 67

IT 80-62-6, Methylmethacrylate 97-63-2, Ethylmethacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, by (hydroxyethyl)imidazolidinone, catalysts for)

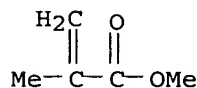
IT 80-62-6, Methylmethacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, by (hydroxyethyl)imidazolidinone, catalysts for)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 36 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:576640 HCAPLUS

DOCUMENT NUMBER: 107:176640

TITLE: Process for tetrahydrofurfuryl methacrylate manufacture

INVENTOR(S): Haubrich, Gerhard; Prescher, Guenter; Faller, Juergen

PATENT ASSIGNEE(S): Degussa A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 3 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3543115	A1	19870611	DE 1985-3543115	19851206 <--
EP 224684	A1	19870610	EP 1986-114054	19861010 <--
EP 224684	B1	19890125		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
AT 40355	E	19890215	AT 1986-114054	19861010 <--
JP 62138486	A2	19870622	JP 1986-289118	19861205 <--
US 4861902	A	19890829	US 1988-246020	19880916 <--
PRIORITY APPLN. INFO.:			DE 1985-3543115	A 19851206 <--
			EP 1986-114054	A 19861010 <--
			US 1986-933441	A1 19861121 <--

ED Entered STN: 14 Nov 1987

AB The title compound (I) is prepared by the transesterification of tetrahydrofurfuryl alc. (II) with Et or Me methacrylate in the presence of alkoxides of alkali or alkaline earth metals. Thus, II and Li were stirred at 25-60° forming a clear solution, Me methacrylate and hydroquinone mono-Me ether were added, the resulting Me methacrylate-methanol were azeotropically distilled off, excess Me methacrylate distilled off, and dry air blown through the reaction mixture, producing, after workup, I having purity 96%.

IC ICM C07D307-12
ICS B01J031-12

CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 27

ST methyl methacrylate transesterification tetrahydrofurfuryl alc

IT **Transesterification**
(of Et or Me methacrylate with tetrahydrofurfuryl alc., in presence of tetrahydrofurfuryl alc. alkali or alkaline earth metal salts)

IT Alkali metals, compounds
RL: USES (Uses)
(compsds., tetrahydrofurfuryl alc. salts, transesterification of Me or Et methacrylate with tetrahydrofurfuryl alc. in presence of)

IT Alkaline earth compounds
RL: USES (Uses)
(salts, of tetrahydrofurfuryl alc., transesterification of Me or Et methacrylate with tetrahydrofurfuryl alc. in presence of)

IT 2455-24-5P, Tetrahydrofurfuryl methacrylate
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of, from Me or Et methacrylate and tetrahydrofurfuryl alc.)

IT 7439-93-2, Lithium, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with tetrahydrofurfuryl alc.)

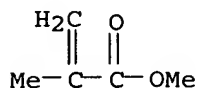
IT 7439-95-4, Magnesium, reactions 7789-78-8, Calcium hydride (CaH₂)
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with tetrahydrofurfuryl alc., for transesterification of Me or Et methacrylate)

IT 31353-58-9 42569-76-6 111050-61-4
RL: USES (Uses)
(transesterification of Et or Me methacrylate with tetrahydrofurfuryl alc. in presence of)

IT 97-99-4, Tetrahydrofurfuryl alcohol
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with Me or Et methacrylate)

IT 80-62-6 97-63-2, Ethyl methacrylate

RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with tetrahydrofurfuryl alc
 .)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with tetrahydrofurfuryl alc
 .)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)

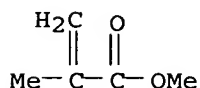


L66 ANSWER 37 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:95964 HCAPLUS
 DOCUMENT NUMBER: 110:95964
 TITLE: Preparation of esters of organic acids
 INVENTOR(S): Kaim, Andrzej; Smolka, Grzegorz
 PATENT ASSIGNEE(S): Uniwersytet Warszawski, Pol.
 SOURCE: Pol., 3 pp.
 CODEN: POXXA7
 DOCUMENT TYPE: Patent
 LANGUAGE: Polish
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 131551	B1	19841130	PL 1979-214301	19790322 <--
PRIORITY APPLN. INFO.:			PL 1979-214301	19790322 <--

ED -- Entered STN: 17 Mar 1989
 AB Esters of organic acids, especially unsatd. acids are prepared by transesterification in the presence of an acid catalyst, and by removing the formed alc. from the reaction mixture The acid catalyst 1-18, aliphatic and/or cycloaliph. hydrocarbon solvent 5-72, and chloro derivs. of aliphatic and/or aromatic hydrocarbons 8-45 are added to a mixture of Me ester of an organic acid and 7-53 and polyhydric alc. 4-47 mol. Optionally, polymerization inhibitors are added. The procedure is especially useful for manufacture of binders.
 Thus, S polymerization inhibitor 0.3 g and concentrated H2SO4, catalyst 8 mL were added to a mixture of Me methacrylate 0.3, polyethylene glycol 0.2, n-hexane 0.38, and tetrachloroethane 0.62 mol. The reaction mixture was boiled, and formed MeOH was removed by azeotropic distillation After 5 h, polyethylene glycol dimethacrylate was obtained in a yield of 90%.
 IC C07C067-02
 CC 35-2 (Chemistry of Synthetic High Polymers)
 ST ester prepn transesterification; polyethylene glycol dimethacrylate prepn
 IT Transestérification
 (of organic acid esters, byproduct alc. removal by azeotropic distillation in)
 IT 80-62-6, Methyl methacrylate 93-58-3, Methyl benzoate

RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with polyoxyethylene)
 IT 80-62-6, Methyl methacrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with polyoxyethylene)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 38 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1984:86260 HCAPLUS
 DOCUMENT NUMBER: 100:86260
 TITLE: (Meth)acrylic acid esters
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58170731	A2	19831007	JP 1982-51020	19820331 <--

PRIORITY APPLN. INFO.: JP 1982-51020 19820331 <--

ED Entered STN: 12 May 1984

AB (Meth)acrylic acid esters 3,5,4-(Me3C)2(HO)C6H2(OCH2)nCH2O2CCR:CH2 (I; n,R given: 0, Me; 1, H; 1, Me) were prepared by **ester exchange** of 3,5,4-(Me3C)2(HO)C6H2(OCH2)nCH2OH (II) with H2C:CRCO2Me (III) in the presence of K2CO3, LiCO3, or Na2CO3. Thus, a mixture of II (n = 0) [88-26-6] 94.6, III (R = Me) (IV) [80-62-6] 200.2, and K2CO3 6 g was refluxed 5 h at 66-68° under **azeotropic** distillation of MeOH-IV to give 95.6% I (n = 0, R = Me) [36536-48-8].

IC C07C069-54; C07C067-03

ICA B01J027-20

CC 35-2 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 25

ST **phenol** acrylate monomer; hydroxybenzyl methacrylate monomer; ester interchange acrylate hydroxyphenoxyethanol; carbonate salt transesterification catalyst

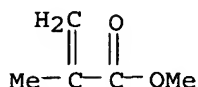
IT Transesterification catalysts
 (alkali metal carbonates, for Me (meth)acrylate with hydroxyphenyl **alcs.**)

IT Carbonates, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of Me (meth)acrylate with hydroxyphenyl **alcs.**)

IT 497-19-8, uses and miscellaneous 554-13-2 584-08-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of Me (meth)acrylate with hydroxyphenyl **alcs.**)

IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with hydroxyphenyl **alcs.**)

IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with hydroxyphenyl alcs.)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 [ANSWER 39 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1984:86259 HCAPLUS
 DOCUMENT NUMBER: 100:86259
 TITLE: (Meth)acrylic acid esters
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58170730	A2	19831007	JP 1982-51019	19820331 <--
PRIORITY APPLN. INFO.:			JP 1982-51019	19820331 <--

ED Entered STN: 12 May 1984
 AB (Meth)acrylic acid esters 3,5,4-(Me3C)2(HO)C6H2(OCH2)nCH2O2CCR:CH2 (I; n,R given: 0, Me; 1, H; 1, Me) were prepared by **ester exchange** reaction of 3,5,4-(Me3C)2(HO)C6H2(OCH2)nCH2OH (II) with H2C:CRCO2Me (III) in the presence of R12SnX2 (IV, R1 = alkyl; X = halogen) or R12SnO. Thus, a mixture of II (n = 0) [88-26-6] 94.6, III (R = Me) (V) [80-62-6] 200.2, and IV (R1 = Bu, X = Cl) [683-18-1] 6 g was refluxed 5 h at 66-68° under **azeotropic** distillation of MeOH-V to give 97.6% I (n = 0, R = Me) [36536-48-8].

IC C07C069-54; C07C067-08

ICA B01J031-12

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 25

ST transesterification catalyst halostannane; **phenol** acrylate monomer; hydroxybenzyl methacrylate monomer; hydroxyphenoxyethanol ester interchange acrylate; stannane catalyst transesterification

IT Transesterification catalysts
 (dibutyldichlorostannane, for Me (meth)acrylate with hydroxyphenyl alcs.)

IT 683-18-1

RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of Me methacrylate with hydroxyphenyl alcs.)

IT 80-62-6

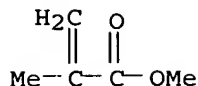
RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with hydroxyphenyl alcs.)

IT 80-62-6

RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with hydroxyphenyl alcs.)

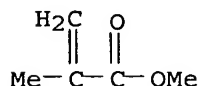
RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 40 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:480200 HCAPLUS
 DOCUMENT NUMBER: 95:80200
 TITLE: Higher acrylates and methacrylates
 PATENT ASSIGNEE(S): Osaka Yuki Kagaku Kogyo Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

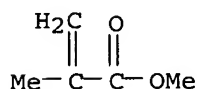
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56032438	A2	19810401	JP 1979-108444	19790824 <--
PRIORITY APPLN. INFO.:			JP 1979-108444	A 19790824 <--
ED Entered STN: 12 May 1984				
AB Higher acrylates and methacrylates were prepared by ester exchange of lower alkyl esters with higher alcs. or polyhydric alcs. in the presence of CaH ₂ . Thus, a mixture of Me ₂ NCH ₂ CH ₂ OH 178, H ₂ C:CM ₂ CO ₂ Me 445, hexane 198, and hydroquinone mono-Me ether 0.87 g was refluxed 2 h to expel H ₂ O, 1.68 g CaH ₂ added, and the mixture reflux with azeotropic removal of MeOH to give 90.1% H ₂ C:CM ₂ CO ₂ CH ₂ CH ₂ NMe ₂ (purity 99.97%).				
IC C07C069-54; C07C067-03; B01J031-12				
CC 23-17 (Aliphatic Compounds) Section cross-reference(s): 35				
IT Transesterification (of acrylates and methacrylates)				
IT 80-62-6 RL: RCT (Reactant); RACT (Reactant or reagent) (transesterification of, with (dimethylamino)ethanol)				
IT 80-62-6 RL: RCT (Reactant); RACT (Reactant or reagent) (transesterification of, with (dimethylamino)ethanol)				
RN 80-62-6 HCAPLUS				
CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)				



L66 ANSWER 41 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:121289 HCAPLUS
 DOCUMENT NUMBER: 94:121289
 TITLE: Glycidyl methacrylate
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent

LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55094381	A2	19800717	JP 1979-3213	19790112 <--
PRIORITY APPLN. INFO.:			JP 1979-3213	A 19790112 <--
ED Entered STN: 12 May 1984				
AB Glycidyl methacrylate (I) was prepared by transesterification of H ₂ C:CMcCO ₂ Me (II) with glycidol (III) in the presence of alkali metal mercaptides, xanthogenates, dithiocarbamates, imides, imines, or phenoxides. Thus, a mixture of II 300, III 37, 4-MeOC ₆ H ₄ OH (polymerization inhibitor) 1, and KOAc 0.3 g was heated 1.5 h at 70-80° and 300 mm Hg under azeotropic removal of MeOH-II with a 5:1 reflux ratio to give 90.8% I.				
IC C07D301-00				
CC 27-2 (Heterocyclic Compounds (One Hetero Atom))				
IT Phenols, compounds				
RL: CAT (Catalyst use); USES (Uses) (alkali metal salts, catalysts, for transesterification of Me methacrylate with glycidol)				
IT 80-62-6				
RL: RCT (Reactant); RACT (Reactant or reagent) (transesterification of, with glycidol)				
IT 80-62-6				
RL: RCT (Reactant); RACT (Reactant or reagent) (transesterification of, with glycidol)				
RN 80-62-6 HCAPLUS				
CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)				

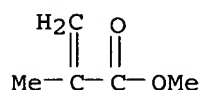


L66 ANSWER 42 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1978:7670 HCAPLUS
 DOCUMENT NUMBER: 88:7670
 TITLE: Ester exchange of (meth)acrylic acid esters
 INVENTOR(S): Murakami, Fumiki; Tejima, Soichi; Yokoyama, Toshihiko
 PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52111512	A2	19770919	JP 1976-26834	19760312 <--
JP 58042861	B4	19830922		
US 4074062	A	19780214	US 1976-703263	19760707 <--
GB 1535242	A	19781213	GB 1976-28681	19760709 <--
FR 2321476	B1	19781020	FR 1976-24051	19760806 <--
DE 2637409	A1	19770303	DE 1976-2637409	19760819 <--
PRIORITY APPLN. INFO.:			JP 1975-101436	A 19750821 <--

JP 1975-101437 A 19750821 <--
 JP 1976-26834 A 19760312 <--

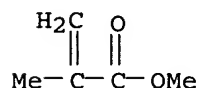
ED Entered STN: 12 May 1984
 AB **Ester exchange** of Me (meth)acrylate with C \geq 4
alcs. was effected in the presence of Mo or Mo compds. Thus, a
 mixture of BuOH [71-36-3] 148.2, CH₂:CMeCO₂Me (I) [80-62-6]
 400.5, MoO₃ 3.6, and hydroquinone mono-Me ether 0.5 g was refluxed 4 h
 with **azeotropic** removal of MeOH-I at 2-10 reflux ratio to give
 98.9% CH₂:CMeCO₂Bu [97-88-1] with 99% conversion of BuOH.
 IC C07C069-54
 CC 35-2 (Synthetic High Polymers)
 Section cross-reference(s): 23
 IT Transesterification catalysts
 (molybdenum or molybdenum compds., for Me methacrylate with C \geq 4
alcs.)
 IT **Alcohols**, reactions
 (C \geq 4, transesterification of (meth)acrylate acid esters with,
 catalysts for)
 IT 7439-98-7, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of (meth)acrylate esters with
 C \geq 4 **alcs.**)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ester exchange of, with butanol, catalysts for)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (ester exchange of, with butanol, catalysts for)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 43 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:112411 HCAPLUS
 DOCUMENT NUMBER: 82:112411
 TITLE: Long-chain alkyl acrylates and methacrylates
 INVENTOR(S): Strehlke, Guenter; Franz, Wilhelm; Osterburg, Guenter
 PATENT ASSIGNEE(S): Deutsche Texaco A.-G.
 SOURCE: Ger. Offen., 14 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
DE 2317226	A1	19741024	DE 1973-2317226	19730406 <--
DE 2317226	B2	19750605		
DE 2317226	C3	19801030		
GB 1446147	A	19760818	GB 1974-11233	19740313 <--
FR 2224437	A1	19741031	FR 1974-11440	19740329 <--
US 3887609	A	19750603	US 1974-456584	19740401 <--
NL 179128	B	19860217	NL 1974-4633	19740404 <--

NL 179128 C 19860716
 BE 813349 A1 19741007 BE 1974-142887 19740405 <--
 JP 49135916 A2 19741227 JP 1974-38753 19740405 <--
 JP 57024775 B4 19820526
 CA 1051918 A1 19790403 CA 1974-196933 19740405 <--
 IT 1009702 A 19761220 IT 1974-20974 19740408 <--
 PRIORITY APPLN. INFO.: / DE 1973-2317226 A 19730406 <--
 ED Entered STN: 12 May 1984
 AB C12-18 alkyl acrylates and methacrylates were prepared in 99.2-9.8% yield without discoloration by transesterification of CH₂:CHCO₂Me and CH₂:CMeCO₂Me (I), resp., in the presence of Bu titanate (II) [5593-70-4] and 100-200 ppm 2,6-di-tert-butyl-p-cresol (III) [128-37-0]-0.1-0.15% charcoal as polymerization inhibitor. Thus, a natural lauryl alc. containing C10 2, C12 68, C14 22, C16 7, and C18 alkyl 1%, II, 0.15% charcoal, 200 ppm III, and I (20% excess) in cyclohexane were heated for .apprx.3 hr at 125° with passing air into the mixture, followed by azeotropic distillation of MeOH-cyclohexane, and recycling of cyclohexane. H₂O was added, the mixture kept 45 min at 80-90°, and the formed Ti(OH)₄ and active charcoal separated by filtration. Steam distillation of the reaction mixture gave 99.8% lauryl methacrylate [142-90-5] (as bottom product) of Hazen color number 15 containing 0.012% I and 0.08% H₂O.
 IC C07C
 CC 35-2 (Synthetic High Polymers)
 Section cross-reference(s): 23
 IT Transesterification catalysts
 (tetrabutyl titanate, for methyl acrylate and methacrylate with higher alcs.)
 IT 5593-70-4
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of methyl acrylate and methacrylate with higher alkanols)
 IT 80-62-6 96-33-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, catalysts for)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, catalysts for)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 / ANSWER 44 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1974:426167 HCAPLUS
 DOCUMENT NUMBER: 81:26167
 TITLE: Polyhydric alcohol polyesters
 INVENTOR(S): Aida, Kazuhiko; Hamamoto, Yoshito
 PATENT ASSIGNEE(S): Kyowa Yuka Co., Ltd.
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 48086813	A2	19731115	JP 1972-19828	19720226 <--
PRIORITY APPLN. INFO.:			JP 1972-19828	A 19720226 <--

ED Entered STN: 12 May 1984

AB Small amts. of water [7732-18-5] affected the **ester exchange** reaction of lower alkyl acrylates or methacrylates with pentaerythritol [115-77-5] or trimethylolalkanes in the presence of acid catalysts. Thus, n-hexane was added at 90-5.deg. to a mixture of trimethylolpropane [77-99-6] 13.42, 99% H2SO4 2, H2O 2, p-methoxyphenol 0.5, and Me methacrylate [80-62-6] 60 g. The mixt was distilled 8.5 hr to remove the hexane-MeOH **azeotrope**, giving 91.1% trimethylolpropane trimethacrylate [3290-92-4]. Trimethylolpropane triacrylate [15625-89-5] and pentaerythritol tetramethacrylate [3253-41-6] were similarly prepared

INCL 16B631.1

CC 35-2 (Synthetic High Polymers)
Section cross-reference(s): 23

ST **polyol** acrylate manuf water; methacrylate **polyol**

IT **Transesterification**
(of alkyl acrylates with **polyols**, in presence of water)

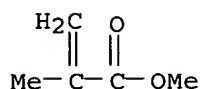
IT 7732-18-5
RL: PROC (Process)
(transesterification in presence of, of alkyl acrylates with **polyols**)

IT 80-62-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with **polyols**, in presence of water)

IT 80-62-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with **polyols**, in presence of water)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 45 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1974:413140 HCAPLUS

DOCUMENT NUMBER: 81:13140

TITLE: Unsaturated carboxylic acid ester

INVENTOR(S): Honma, Giichiro; Yoshinaka, Shigeo; Shigeki, Nobuo

PATENT ASSIGNEE(S): Mitsubishi Gas Chemical Co., Inc.

SOURCE: Jpn. Tokkyo Koho, 6 pp.
CODEN: JAXXAD

DOCUMENT TYPE: Patent

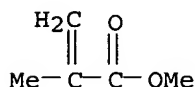
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 48042044	B4	19731210	JP 1970-125665	19701229 <--

PRIORITY APPLN. INFO.: JP 1970-125665 19701229 <--
 ED Entered STN: 12 May 1984
 AB Unsatd. carboxylic acid esters were prepared by steam-distillation (in the presence of an alkaline earth metal carbonate of the unsatd. carboxylic acid) of higher alkyl esters obtained by acid-catalyzed transesterification of unsatd. carboxylic acid lower alkyl esters with higher **alcs.** with or with-out a previous distillation of the unreacted ester or **alc**. Thus, a mixture of CH₂:CHCO₂Me (I), MeOH, and H₂SO₄ was heated 7 hr while removing the **azeotrope** of MeOH and I, and the reaction mixture distilled at 130 mm Hg to remove the unreacted I; H₂O and 1.85 equivs powdered CaCO₃ (with respect to H₂SO₄) were added and the mixture was steam-distilled to give 93% CH₂:CHCO₂Bu.
 IC C07C
 CC 23-17 (Aliphatic Compounds)
 IT **Transesterification**
 (of unsatd. carboxylic esters)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with butanol)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with butanol)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



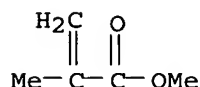
L66 ANSWER 46 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1974:108000 HCAPLUS
 DOCUMENT NUMBER: 80:108000
 TITLE: Interchange of ester radicals between acrylic acid esters and methacrylic acid esters
 INVENTOR(S): Morlock, Gerhard; Trageser, Hermann
 PATENT ASSIGNEE(S): Deutsche Gold- und Silber-Scheideanstalt vorm. Roessler
 SOURCE: Ger., 3 pp.
 CODEN: GWXXAW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1568376	A	19700319	DE 1966-D49730	19660329 <--
DE 1568376	B2	19731206		

PRIORITY APPLN. INFO.: /DE 1966-D49730 A 19660329 <--
 ED Entered STN: 12 May 1984
 AB CH₂:CRCO₂R₁ (I; R, R₁ = H, Et; Me, Me) were transesterified with aliphatic **alcs.** or their esters in the presence of (MeO)₂Mg catalyst and a polymerization inhibitor. Thus, to 8 moles I (R = R₁ = Me) stabilized with 0.03% diphenylbenzidine were added 2 moles (HOCH₂CH₂OCH₂)₂; the mixture was heated to boiling and H₂O removed at 100 mm Hg as an **azeotrope** with unreacted I, then 5 g (MeO)₂Mg in 20 ml MeOH were added and, after 2-2.5

hr, MeOH and excess I were removed by distillation, leaving 560 g (98%) colorless (CH₂:CMeCO₂CH₂CH₂OCH₂)₂ as residue. Similarly prepared were I [R = Me, R₁ = CH₂CH₂, n-C₁₆H₃₃, (CH₂)₄; R = H, R₁ = CH₂CH₂].

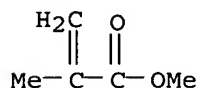
IC C07C
 CC 23-17 (Aliphatic Compounds)
 ST acrylate methacrylate transesterification catalyst; alc aliph
 transesterification acrylate catalyst
 IT Transesterification catalysts
 (magnesium methoxide, for Et acrylate and Me methacrylate with aliphatic
 alcs. and esters)
 IT **Alcohols**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (polyhydric polyether, transesterification with Et acrylate or Me
 methacrylate, catalyst for)
 IT Magnesium, with methanol
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of Et acrylate and Me methacrylate
 with alcs. and esters)
 IT 109-88-6
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for transesterification of Et acrylate and Me methacrylate
 with aliphatic alcs. and esters)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with aliphatic alcs. and
 esters, catalysts for)
 IT 140-88-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with ethylene glycol, catalyst for)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with aliphatic alcs. and
 esters, catalysts for)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 47 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1972:540735 HCAPLUS
 DOCUMENT NUMBER: 77:140735
 TITLE: Acrylic and methacrylic higher esters
 INVENTOR(S): Jobert, Raymond; Vuchner, Bernard
 PATENT ASSIGNEE(S): Ugine Kuhlmann
 SOURCE: U.S., 4 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3686268	A	19720822	US 1970-13845	19700224 <--
PRIORITY APPLN. INFO.:			US 1970-13845	A 19700224 <--

ED Entered STN: 12 May 1984
 AB High purity acrylates and methacrylates were obtained in high yield by transesterification of an alc. with an acrylate or methacrylate in the presence of a Ti phenoxide catalyst, followed by drawing off the alc. formed by azeotropic distillation with the light or lower ester. Thus, Me methacrylate (I) [80-62-6] 200, BuOH 74, and tetramethoxyphenyl titanate [36703-87-4] 1.08 g was refluxed at 700 mm to give 43 g MeOH-I azeotrope (removed during 3 hr), 85 g I (>200 mm), 16 g of an intermediate fraction, and, finally at 40 mm, 128 g butyl methacrylate [97-88-1] of 99.71% purity and 95% yield (based on alc.). Similar results were obtained with 7 other catalysts in the above conversion or in the preparation of other monomers.
 IC B01J; C07C
 INCL 260465400
 CC 35-2 (Synthetic High Polymers)
 IT Phenols, compounds
 RL: USES (Uses)
 (titanium salts, transesterification catalysts, for acrylic acid derivs.)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, catalysts for)
 IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, catalysts for)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 48 OF 52... HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1972:500836 HCAPLUS
 DOCUMENT NUMBER: 77:100836
 TITLE: Acrylic or methacrylic esters of mono-or polyhydroxyalkylamines
 INVENTOR(S): Bodnaryuk, F. N.; Korshunov, M. A.; Melekhov, V. M.; Lazaryants, V. E.
 SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1972, 49(10), 88-89.
 CODEN: URXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Russian
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 332073		19720314	/SU /	/19680129 /

ED Entered STN: 12 May 1984
 AB The title compds. were prepared by transesterification of Me acrylate or methacrylate (5-25 mole % excess) with mono- or polyhydroxyalkylamines in the presence of transesterification catalysts such as Na, Mg, or Ti alcohols, and polymerization inhibitors, e.g. hydroquinone, in an inert solvent at temps. up to the b.p. of the reaction mixture Preferred solvents were organic compds. that form an azeotropic heterophase mixture with

the MeOH formed in the reaction, e.g., n-hexane or cyclohexane.

IC C07C

CC 23-17 (Aliphatic Compounds)

ST transesterification acrylate methacrylate amino alc

IT **Transesterification**
(of methyl acrylate and methacrylate by aliphatic amino alcs
.)

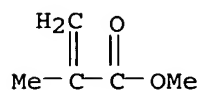
IT **Alcohols, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of methyl acrylate and methacrylate by amino
aliphatic)

IT 80-62-6 96-33-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, by aliphatic amino alcs.)

IT 80-62-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, by aliphatic amino alcs.)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 49 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1972:502407 HCAPLUS

DOCUMENT NUMBER: 77:102407

TITLE: Fatty esters of acrylic and methacrylic acid

INVENTOR(S): Laviron, Charles

PATENT ASSIGNEE(S): UGILOR

SOURCE: Fr., 7 pp.
CODEN: FRXXAK

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2088971		19720211	FR 1970-16039	19700430 <--

ED Entered STN: 12 May 1984

AB 2-Ethylhexyl acrylate [103-11-7] and several methacrylates [CH₂:CMeCO₂R [I, R = Bu, (CH₂)₂NMe₂, (CH₂)₂OH, (CH₂)₁₁Me-(CH₂)₁₃Me mixture, cyclohexyl, allyl (II), and glycidyl]] were prepared from Et acrylate or Me methacrylate (III), the appropriate ROH, a stabilizer, and thallium ethylate (IV) [36196-64-2]. For example, transesterification was effected by boiling III 400, allyl alc. 116, and hydroquinone mono-Me ether 0.5 part at 300 mm, adding 0.0884 part IV, and azeotroping a MeOH-III mixture to give 99.5% allyl methacrylate (II) [96-05-9].

IC C07C

CC 35-2 (Synthetic High Polymers)
Section cross-reference(s): 23, 24, 27

ST methacrylate transesterification; acrylate ethylhexyl; allyl methacrylate; glycidyl methacrylate; aminoethyl methacrylate; hydroxyethyl methacrylate; cyclohexyl methacrylate; fatty alc methacrylate

IT 96-05-9P
RL: IMF (Industrial manufacture); PREP (Preparation)

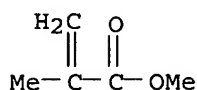
(manufacture of, by transesterification of methyl methacrylate with allyl alc.)

IT 868-77-9P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of, by transesterification of methyl methacrylate with ethylene glycol)

IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with alcs.)

IT 80-62-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, with alcs.)

RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 50 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1970:78453 HCAPLUS
 DOCUMENT NUMBER: 72:78453
 TITLE: Methacrylate transesterification
 INVENTOR(S): Korn, Rudolf; Crahmer, Heinz; Gruetzke, Dieter
 SOURCE: Ger. (East), 3 pp.
 CODEN: GEXXA8
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

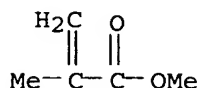
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 69124		19691005	DD	19671005 <-
RO 52381			RO	

ED Entered STN: 12 May 1984

AB Liquid carboxylate esters were transesterified at elevated temps. in the presence of a Ti polyacrylate or Ti polymethacrylate prepared by addition of orthotitanates during the copolymn. of acrylic acid, or methacrylic acid (I) and other vinyl compds. Thus, 50 parts I and 50 parts Me methacrylate (II) were copolymd. with 5 parts divinylbenzene, and the copolymer was treated with excess Ti(OBu)₄, refluxed for 1 hr, filtered, and washed with MeOH to give a catalyst (III) containing 8.9% Ti. A C6-9 alc. 196, II 380, phenothiazine 1, and III 2.5 g were heated, the MeOH-II azeotrope was distilled, and after 3 hr at 110-20° the mixture was filtered free of catalyst and freed of excess II to give 99% conversion to the transesterified product. When H₂SO₄ was used as the catalyst, 85% conversion was obtained. Bu methacrylate, was also used in catalyst preparation, and octyl alc., ethanolamine, BuOAc, EtOBz, di-Et oxalate, and BuOH were also used in similar transesterifications. The catalysts were colorless powders or pellets, had good thermal stability and resistance to hydrolysis, and were easily filtered from the product for reuse.

IC C07B
 CC 23 (Aliphatic Compounds)
 IT 80-62-6, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)

(transesterification of, titanium-containing methacrylate polymers catalysts for)
 IT 80-62-6, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of, titanium-containing methacrylate polymers catalysts for)
 RN 80-62-6 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 51 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:505833 HCAPLUS

DOCUMENT NUMBER: 69:105833

TITLE: Determination of conditions for the production of some esters of methacrylic acid by reesterification of methyl methacrylate

AUTHOR(S): Kosanovic, Djuro; Stojanovic, Nadezda; Stojanovic, Ostoja

CORPORATE SOURCE: Farm.-Hem. Ind. "Galenika", Belgrade, Yugoslavia

SOURCE: Tehnika (Belgrade, Yugoslavia) (1968), 23(1), 117-19

CODEN: TEHBA5; ISSN: 0040-2176

DOCUMENT TYPE: Journal

LANGUAGE: Croatian

ED Entered STN: 12 May 1984

AB The reaction conditions for the preparation of octyl (I), hexyl (II), and benzyl (III) methacrylates by transesterification of Me methacrylate (IV) with the corresponding alcs. were investigated; especially examined was the effect of efficient **azeotropic** MeOH removal on the optimum molar ratio of the reactants. The following maximum conversions were obtained (ester, % yield, and IV-alc. molar ratio given): I, 95.6, 1.8:1; II, 90, 1.5:1; III, 73.6, 1.6:1. The catalyst was H₂SO₄. Refractometry was used in the determination of MeOH in the **azeotropic** mixture

CC 23 (Aliphatic Compounds)

IT 80-62-6, reactions

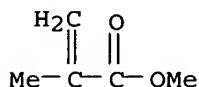
RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of)

IT 80-62-6, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (transesterification of)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



L66 ANSWER 52 OF 52 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:95287 HCAPLUS

DOCUMENT NUMBER: 68:95287

TITLE: Determination of the conditions for production of some esters of methacrylic acid by transesterification of methyl methacrylate

AUTHOR(S): Borisavljevic, Ruza; Kosanovic, Duro; Stojanovic, Ostoja

CORPORATE SOURCE: Razvojna Lab. "Galenika", Belgrade-Zemun, Yugoslavia

SOURCE: Tehnika (Belgrade, Yugoslavia) (1967), 22(6), 1045-9
CODEN: TEHBAS; ISSN: 0040-2176

DOCUMENT TYPE: Journal

LANGUAGE: Croatian

ED Entered STN: 12 May 1984

AB The conditions of the preparation of CH₂:CMeCO₂R (I) (R = C₈H₁₇, C₁₂H₂₅, C₁₆H₃₃, and C₁₇H₃₅) by transesterification of CH₂:CMeCO₂Me (II) were examined II (1 mole) and ROH (0.4-0.5 mole) were placed in a 250 ml. 3-necked flask with a Vigreux fractionating column 70 cm. high. As inhibitors of the polymerization were added hydroquinone (3 g.), PhOH (5 g.), or tannic acid (4 g.). H₂SO₄, p-toluenesulfonic acid (III), Al isopropylate, or EtONa were added as catalysts. After beginning of boiling the mixture was heated 15-45 min. in an oil bath to 64.2° at the top of the column, at which the azeotrope of MeOH (84.5%) and II was distilled After 6-9 hrs. 110-15° was reached in the flask. Then II was distilled 1 hr. at 100° at the top of the column. The residue in the flask was neutralized by Na₂CO₃, filtered, and distilled in vacuo. II, ROH, and then I were separated After next distillation in vacuo through a Vigreux fractionating column, 20 cm. high, 99% purity I was obtained. The optimum M ratio II-ROH proved to be 2:1-2.5:1. H₂SO₄ and III were the most effective as catalysts. The H₂SO₄ content 1.1-3.75% resulted in the maximum yield of the reaction (71.4-90.86%).

CC 23 (Aliphatic Compounds)

IT Optimization
(of methyl methacrylate transesterification with long-chain alcs.)

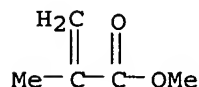
IT Esterification
(trans., of methyl methacrylate with long-chain alcs., optimization of)

IT 80-62-6, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with long-chain alcs., optimization of)

IT 80-62-6, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(transesterification of, with long-chain alcs., optimization of)

RN 80-62-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester (9CI) (CA INDEX NAME)



=> d que 116

```
L8      QUE ABB=ON  PLU=ON  ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
      (ESTER(2A)?EXCHANG?)
L9      QUE ABB=ON  PLU=ON  DOI, J?/AU
L10     QUE ABB=ON  PLU=ON  SATOU, Y?/AU
L11     QUE ABB=ON  PLU=ON  TANIGUCHI, Y?/AU
L12     QUE ABB=ON  PLU=ON  TOKUDA, M?/AU
L13 (    3988)SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L9 OR L10 OR L11 OR L12)
L14 (    18)SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13 AND L8
L15     QUE ABB=ON  PLU=ON  ?METHACRYL?
L16     14 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14 AND L15
```

=> d his 165

```
(FILE 'WPIX, MEDLINE, BIOSIS, EMBASE, PASCAL, JICST-EPLUS, SCISEARCH,
CONF, CONFSCI, DISSABS' ENTERED AT 08:24:08 ON 10 MAR 2006)
L65     2 S L62 OR L64
```

=> d que 165

```
L9      QUE ABB=ON  PLU=ON  DOI, J?/AU
L10     QUE ABB=ON  PLU=ON  SATOU, Y?/AU
L11     QUE ABB=ON  PLU=ON  TANIGUCHI, Y?/AU
L12     QUE ABB=ON  PLU=ON  TOKUDA, M?/AU
L15     QUE ABB=ON  PLU=ON  ?METHACRYL?
L19     QUE ABB=ON  PLU=ON  ?TRANSESTER? OR (TRANS(1W)ESTER?) OR
      (ESTER(2A)?EXCHANG?)
L24     QUE ABB=ON  PLU=ON  ?AZEOTROP?
L29     QUE ABB=ON  PLU=ON  AZEO(1W)TROP?
L61     12833 SEA (L9 OR L10 OR L11 OR L12)
L62     2 SEA L61 AND L19
L63     45 SEA L61 AND L15
L64     1 SEA L63 AND (L24 OR L29)
L65     2 SEA L62 OR L64
```

=> dup rem 116 165

DUPLICATE IS NOT AVAILABLE IN 'CONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
FILE 'HCAPLUS' ENTERED AT 08:32:48 ON 10 MAR 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'WPIX' ENTERED AT 08:32:48 ON 10 MAR 2006
COPYRIGHT (C) 2006 THE THOMSON CORPORATION

FILE 'JICST-EPLUS' ENTERED AT 08:32:48 ON 10 MAR 2006
COPYRIGHT (C) 2006 Japan Science and Technology Agency (JST)
PROCESSING COMPLETED FOR L16
PROCESSING COMPLETED FOR L65
L67 15 DUP REM L16 L65 (1 DUPLICATE REMOVED)
 ANSWERS '1-14' FROM FILE HCAPLUS
 ANSWER '15' FROM FILE JICST-EPLUS

=> file stnguide

FILE 'STNGUIDE' ENTERED AT 08:32:57 ON 10 MAR 2006
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE

AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Mar 3, 2006 (20060303/UP).

=> d ibib ed ab l67 1-15

YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS, JICST-EPLUS' - CONTINUE? (Y)/N:y

L67, ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2004:675711 HCAPLUS

DOCUMENT NUMBER: 141:206826

TITLE: Process for the preparation of methacrylic ester

INVENTOR(S): Doi, Junichi; Satou, Yoshihiko; Taniguchi, Yoshiyuki; Tokuda, Masanori

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004069783	A1	20040819	WO 2004-JP1036	20040203
W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KR, KR, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.: / JP 2003-30671 A 20030207

OTHER SOURCE(S): CASREACT 141:206826

ED Entered STN: 19 Aug 2004

AB A process for producing a methacrylic ester which comprises subjecting Me methacrylate and alc. or phenol to transesterification in a reactor equipped with a distillation column while removing from the system the byproduct methanol as an azeotropic mixture with Me methacrylate with refluxing, wherein after the temps. in the uppermost section, intermediate section, and lowermost section in the distillation column reached 63 to 68 °C, 68 to 90 °C, and 90 to 100 °C, resp., in terms of temperature at ordinary pressure, the removal of the azeotropic mixture of methanol and Me metharylate from the system is initiated and the refluxing ratio is regulated so as to maintain such temps. in the distillation column throughout the period in which the conversion of the alc. or phenol is in the range of 0 to 95%. For example, a mixture of Me methacrylate (1051.3 g), lauryl alc. (652.2 g), 4-acetylamino-2,2,6,6-tetramethylpiperidin N-oxide (0.04 g) was heated for 1 h., then cooled. After addition of tetramethyltitanate (0.86 g), the resulting mixture was stirred at reflux with providing 4-acetylamino-2,2,6,6-tetramethylpiperidineN-oxide/methyl

methacrylate (1000 ppm) at a rate of 2 mL/h, while removing methanol as an azeotropic mixture with Me **methacrylate** for 3 h. Wherein, refluxing ratio was regulated so as to maintain 64-65 °C, 70-80 °C, and 99-100°C, resp. in the uppermost section, intermediate section, and lowermost section in the distillation column. Then, temperature in the uppermost section, intermediate and lowermost section were controlled to >95 °C, >99 °C, resp. (refluxing ratio = 0) to remove methanol. After 4 h, the reaction mixture (1485.8 g) was analyzed by gas chromatog. to show Me **methacrylate** (40.1%), lauryl alc. (0.13%) and lauryl **methacrylate** (59.0%).

L67 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:51020 HCAPLUS
DOCUMENT NUMBER: 142:114659
TITLE: Manufacture of (meth)acrylic acid esters with reduced low-boiling impurities
INVENTOR(S): Fukui, Tomoki; **Tokuda, Masanori**; Sakai, Haruo
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2005015398	A2	20050120	JP 2003-183205	20030626
PRIORITY APPLN. INFO.:			JP 2003-183205	20030626

ED Entered STN: 20 Jan 2005

AB (meth)acrylic acid esters are manufactured by **transesterification** of alkyl (meth)acrylates with alcs., mixing with acids, and purifying by distillation. Thus, Me acrylate (I) was **transesterified** with N,N-dimethylaminoethanol (II), mixed with acrylic acid, and distilled to give N,N-dimethylaminoethyl acrylate with content of I and II 170 and 290 ppm, resp.

L67 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:631744 HCAPLUS
DOCUMENT NUMBER: 141:157611
TITLE: Manufacture of (meth)acrylate esters by **transesterification** using tin catalysts
INVENTOR(S): Murata, Naoshi; Oishi, Kosuke; **Doi, Junichi**
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2004217575	A2	20040805	JP 2003-7540	20030115
PRIORITY APPLN. INFO.:			JP 2003-7540	20030115

ED Entered STN: 06 Aug 2004

AB The esters are manufactured by **transesterification** of alkyl (meth)acrylate with monohydric alc. using Sn compound as a catalyst, distillation

of a product, and transesterification of alkyl (meth)acrylate with monohydric alc. using the distillation residue as a catalyst, wherein (1) H₂O contents of the 1st and the 2nd reaction solution are 0.0001-5 mol/mol-Sn and (2) H₂O content of the distillation residue is 0.02-5 mol/mol-Sn before use in the 2nd reaction. The reaction is carried out repeatedly using recycled catalysts with high activity. Thus, manufacture of Bu methacrylate from Me methacrylate and BuOH was exemplified.

L67 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:549687 HCAPLUS
DOCUMENT NUMBER: 141:72031
TITLE: Manufacture of (meth)acrylic acid esters using azeotropic solvents with high yield
INVENTOR(S): Tokuda, Masanori; Fukui, Tomoki; Sakai, Haruo
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004189650	A2	20040708	JP 2002-358005	20021210
PRIORITY APPLN. INFO.:			JP 2002-358005	20021210

ED Entered STN: 09 Jul 2004

AB Title esters are manufactured by transesterification of alkyl (meth)acrylates with alcs. in the presence of azeotropic solvents in a distillation column reactor while distilling out generated alkyl alcs. and the solvents from the top of the column at a temperature $\leq 2^\circ$ higher than the azeotropic temperature, and also while keeping the column bottom temperature at $\leq 10^\circ$ lower than the b.p. of the solvents. Thus, Me methacrylate (b.p. 100.8°) was transesterified with BuOH in the presence of Ti(OBu)₄ and phenothiazine at column top temperature 65.0° and bottom temperature $93-101^\circ$ for 2.5 h to give 97.4% Bu methacrylate.

L67 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:52780 HCAPLUS
DOCUMENT NUMBER: 140:111418
TITLE: Preparation of ketalized glycerol (meth)acrylates and glyceryl (meth)acrylate
INVENTOR(S): Doi, Junichi; Masaki, Tomohiro
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004018389	A2	20040122	JP 2002-171259	20020612
PRIORITY APPLN. INFO.:			JP 2002-171259	20020612
OTHER SOURCE(S): CASREACT 140:111418; MARPAT 140:111418				

ED Entered STN: 22 Jan 2004

AB The title (meth)acrylates I [A = COCR1:CH2 (R1 = H, Me); R2, R3 = H, alkyl, aryl, alkenyl, aralkyl] (II) are prepared by treating I (A = H; R2, R3 = same as above) (III) with CH:CR1CO2R4 (R1 = same as above; R4 = C1-4 alkyl) in the presence of Ti compds. and/or Sn compds. CH2:CR1CO2CH2CH(OH)CH2OH (IV; R1 = H, Me), useful as materials for contact lenses, aqueous paints, etc., are prepared by reacting II with H2O in the presence of cation exchange resins. A mixture of 397.7 g III (R2 = R3 = Me), 1501 g CH:CMCO2Me, a N-oxyl compound, and Ti(OMe)4 was stirred while bubbling with air at 105-110° for 2.5 h to give 537 g II (R1 = R2 = R3 = Me) with purity 99.0% free from Michael addition products. This was mixed p-MeC6H4OH and treated with H2O and RCP 160M (cation exchange resin) at 24° for 27 h to give 86.4% IV (R1 = Me).

L67 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:734727 HCAPLUS
DOCUMENT NUMBER: 139:246304
TITLE: Process for manufacturing (meth)acrylic ester
INVENTOR(S): Tokuda, Masanori; Fukui, Tomoki
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003261504	A2	20030919	JP 2002-60462	20020306
PRIORITY APPLN. INFO.:			JP 2002-60462	20020306

ED Entered STN: 19 Sep 2003

AB In the process for manufacturing (meth)acrylic acid ester (I) by reacting (meth)acrylic acid alkyl ester (II) with an alc. (III) in the presence of a titanium **transesterification** catalyst, the reaction mixture containing unreacted II, III and I is distilled to recover I, II, and III, and the residue containing the catalyst is contacted with an alc. to regenerate the alkoxytitanium compound, and the regenerated catalyst is used as a part of the **transesterification** catalyst. Bu **methacrylate** (IV) was prepared with 100% selectivity for IV.

L67 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:214708 HCAPLUS
DOCUMENT NUMBER: 138:221983
TITLE: Manufacture of high-purity polyfunctional (meth)acrylate esters with solid **transesterification** catalysts
INVENTOR(S): Tokuda, Masanori; Doi, Junichi; Fukui, Tomoki
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003081913	A2	20030319	JP 2001-274913	20010911

PRIORITY APPLN. INFO.: JP 2001-274913 20010911

OTHER SOURCE(S): MARPAT 138:221983

ED Entered STN: 19 Mar 2003

AB Title esters are manufactured by transesterification between (meth)acrylate esters and C2-20 polyols in the presence of CaO, Ca(OH)₂, Mg, and/or Mg(OH)₂ and hydroxides, halides, (bi)carbonates, carboxylates, and/or alkoxides of Na and/or K as catalysts and preferably piperidine-N-oxyl derivs. as polymerization inhibitors. Thus, Me **methacrylate** was transesterified with ethylene glycol in the presence of CaO, KOH, and 4-acetylamino-2,2,6,6-tetramethylpiperidine N-oxyl at 109-115° for 6.5 h while blowing air, filtered, the filtrate mixed with SA1 (activated clay) at 50° for 60 min, filtered, and evaporated to give 88.2% ethylene glycol **dimethacrylate** with APHA ≤5.

L67 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:132352 HCAPLUS

DOCUMENT NUMBER: 138:169859

TITLE: Purification of carboxylic acid esters with solid adsorbents

INVENTOR(S): Tokuda, Masanori; Yoshida, Koichi; Doi, Junichi; Okita, Motomu

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003048866	A2	20030221	JP 2002-85300	20020326
PRIORITY APPLN. INFO.:			JP 2001-87806	A 20010326
			JP 2001-162453	A 20010530

OTHER SOURCE(S): CASREACT 138:169859; MARPAT 138:169859

ED Entered STN: 21 Feb 2003

AB Carboxylic acid esters prepared by reaction with organic Ti group compound catalysts are purified by treatment with solid adsorbents. Me **methacrylate** was transesterified with Bu alc. in the presence of Ti(OBu)₄ and 4-acetamino-2,2,6,6-tetramethylpiperidine-N-oxyl at 104-130° for 2.5 h and treated with activated clay (SA 1) to give 96.8% Bu **methacrylate** containing ≤30 ppb Ti.

L67 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:636471 HCAPLUS

DOCUMENT NUMBER: 137:169970

TITLE: Manufacture of (meth)acrylic acid esters

INVENTOR(S): Tokuda, Masanori; Yoshida, Koichi; Okita, Motomu

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----

JP 2002234859 A2 20020823 JP 2001-33635 20010209
PRIORITY APPLN. INFO.: JP 2001-33635 20010209

OTHER SOURCE(S): MARPAT 137:169970

ED Entered STN: 23 Aug 2002

AB The compds. are manufactured by **transesterification** of (meth)acrylic acid esters with C3-20 alcs. in the presence of catalysts containing ≥ 1 compds. selected from CaO, Ca(OH)₂, MgO, and Mg(OH)₂ and ≥ 1 compds. selected from sodium or potassium hydroxides, halides, carbonates, hydrogencarbonates, carboxylates, and alkoxides. Thus, Me **methacrylate** was esterified with n-BuOH in the presence of Ca(OH)₂, KOH, and 2,2,6,6-tetramethyl-4-acetamidopiperidine-1-oxyl at 102-133° for 3 h and treated with activated clay to give 90.2% n-Bu **methacrylate** with 99.8% purity.

L67 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:533189 HCAPLUS

DOCUMENT NUMBER: 137:94161

TITLE: Manufacture of (meth)acrylate esters with little discoloration or polymerization, and solid catalysts used for the manufacture

INVENTOR(S): Yoshida, Koichi; Tokuda, Masanori; Sonobe, Hiroshi; Okita, Motomu

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2002201159	A2	20020716	JP 2001-333008	20011030
PRIORITY APPLN. INFO.:			JP 2000-334578	A 20001101

OTHER SOURCE(S): MARPAT 137:94161

ED Entered STN: 17 Jul 2002

AB Title esters are manufactured by **transesterification** between Me (meth)acrylate and C3-20 alcs. or C6-20 phenols in the presence of (A) CaO, Ca(OH)₂, and/or MgO and LiaX (X = OH, O, CO₃²⁻, C1-6 carboxylate ion, C1-4 alkoxy; a = valency) as catalysts and (B) N-oxyl compds. as polymerization inhibitors. Thus, Me **methacrylate** was **transesterified** with lauryl alc. in the presence of CaO, LiOH, and 4-acetylamino-2,2,6,6-tetramethylpiperidine-N-oxyl with bubbling air and removing MeOH for 6 h, filtered, and evaporated to give 98.0% lauryl **methacrylate**. No polymer scaling was observed in the reactor.

L67 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:495283 HCAPLUS

DOCUMENT NUMBER: 135:92994

TITLE: Manufacture of (meth)acrylic acid esters

INVENTOR(S): Tokuda, Masanori

PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
------------	------	------	-----------------	------

JP 2001187763 A2 20010710 JP 1999-373801 19991228
PRIORITY APPLN. INFO.: JP 1999-373801 19991228
OTHER SOURCE(S): MARPAT 135:92994
ED Entered STN: 10 Jul 2001
AB Title compds. are prepared by **transesterification** of alkyl
 (meth)acrylates with C3-20 alcls. or phenols in the presence of catalysts
 prepared by reaction of dialkyltin oxides with (meth)acrylic acids
 corresponding to objective esters. Me acrylate (1051.1 g) was reacted
 with 490.3 g N,N-dimethylaminoethanol in the presence of phenothiazine and
 catalyst solution (prepared from dibutyltin oxide and acrylic acid) at
 80-100° for 6 h to give 675 g N,N-dimethylaminoethyl acrylate.

L67 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:412204 HCAPLUS
DOCUMENT NUMBER: 133:43958
TITLE: Preparation of high-purity (meth)acrylic acid esters
INVENTOR(S): Yoshida, Koichi; Tokuda, Masanori; Sonobe,
 Hiroshi; Ohkita, Motomu
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2000169429	A2	20000620	JP 1998-351392	19981210

PRIORITY APPLN. INFO.: JP 1998-351392 19981210
OTHER SOURCE(S): MARPAT 133:43958
ED Entered STN: 21 Jun 2000
AB The title compds. are prepared by **transesterification** of Me
 (meth)acrylate with C3-20 alcls. or phenols in the presence of supported
 transition metal compound catalysts and I [R1-R4 = alkyl; R5 = H, OH, OR,
 OCOR, NHCOR, O[(C2H4O)n + (C3H6O)m]H; R6 = H, or R5R6 = :O; R =
 (un)substituted C1-18 alkyl, alkenyl, aryl; m, n = 0-10, and m = n ≠
 0]. Thus, stirring MMA with allyl alc. in the presence of
 silica/alumina-supported Ti catalysts and I (R1-R4 = Me; R5 = OH; R6 = H)
 gave allyl **methacrylate** with 99.5% purity.

L67 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:518694 HCAPLUS
DOCUMENT NUMBER: 131:144962
TITLE: Manufacture of (meth)acrylate esters with high purity
INVENTOR(S): Sonobe, Hiroshi; Doi, Junichi; Tani, Teruo;
 Suzuki, Shinshi; Ashita, Masafumi
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan; Osaka Yuki Kagaku
 Kogyo Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 11222462	A2	19990817	JP 1998-21049	19980202

JP 3529613 B2 20040524
PRIORITY APPLN. INFO.: JP 1998-21049 19980202
OTHER SOURCE(S): MARPAT 131:144962
ED Entered STN: 19 Aug 1999
AB Title esters are manufactured in high yield by **transesterification** of Me (meth)acrylates with C3-20 alcs. in the presence of Ti(OMe)₄ and 2,2,6,6-tetraalkylpiperidin-N-oxyl whose 4-position may be substituted with OH, OR, OCOR, NHCOR, or O[(EO)_n(PO)_m]H or form C(O) (R = C1-18 linear or branched alkyl, alkenyl, aryl which may be substd. with alkyl; EO = ethyleneoxy group; PO = propyleneoxy group; m, n = 0-10) as polymerization inhibitors. Thus, 400 g Me **methacrylate** and 116 g allyl alc. were **transesterified** in the presence of 0.17 g Ti(OMe)₄ and 0.08 g 2,2,6,6-tetramethyl-4-hydroxypiperidin-N-oxyl at 89-115° with removing MeOH by distillation The reaction mixture was distilled to give 240 g allyl **methacrylate** with 100% purity.

L67 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:443654 HCAPLUS
DOCUMENT NUMBER: 125:87457
TITLE: Preparation of (meth)acrylic acid esters of alkoxy alcohols
INVENTOR(S): Doi, Junichi; Myoshi, Takanori; Sakashita, Keiichi; Kawarada, Yasushi; Fujii, Junji
PATENT ASSIGNEE(S): Mitsubishi Rayon Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08092161	A2	19960409	JP 1995-189623	19950725
PRIORITY APPLN. INFO.:			JP 1995-189623	A 19950725
			JP 1994-192303	19940725

OTHER SOURCE(S): MARPAT 125:87457
ED Entered STN: 26 Jul 1996
AB Title compds. H₂C:CR1CO₂(CH₂)_nOCMe₃ (R₁ = H, Me; n = 3-10), useful as precursors of hydroxyalkyl (meth)acrylates, are prepared Thus, 4-tert-butoxy-1-butanol 29.24, Me acrylate (I) 430.46, 4-methoxyphenol 1.72, and NaPH₂O₂ 0.29 g were heated at 82° for 2 h with removing H₂O and I, and **transesterified** at 82-88° in the presence of Ti(Obu)₄ to give 39.12 g 4-tert-butoxybutyl acrylate.

L67 ANSWER 15 OF 15 JICST-EPlus COPYRIGHT 2006 JST on STN
ACCESSION NUMBER: 1000368730 JICST-EPlus
TITLE: **Trans-esterification** reactions using titanium oligomer-supported catalysts.
AUTHOR: TOKUDA MASANORI; YOSHIDA YASUKAZU; IZUMI JINKO; OKITA MOTOMU
CORPORATE SOURCE: Mitsubishireiyo Chuogiken
SOURCE: Shokubai (Catalysts & Catalysis), (2000) vol. 42, no. 2, pp. 99. Journal Code: F0319A (Fig. 2, Ref. 3)
CODEN: SHKUJ; ISSN: 0559-8958
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Short Communication
LANGUAGE: Japanese
STATUS: New

AB **Trans-esterification** reactions of alcohols with several kinds of esters have been studied to find that new heterogeneous catalysts enhance these reactions almost as rapidly as homogeneous catalysts. These new catalysts were prepared by hydrolysis of transition metal alkoxides forming metal contained oligomers followed by absorptions of oligomers onto various supports. It is considered that these catalysts may be help toward the decrease of chemical wastes and establishing a new **trans-esterification** process. (author abst.)

=> file stnguide

FILE 'STNGUIDE' ENTERED AT 08:33:51 ON 10 MAR 2006
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Mar 3, 2006 (20060303/UP).

=>

THIS PAGE BLANK (USPTO)